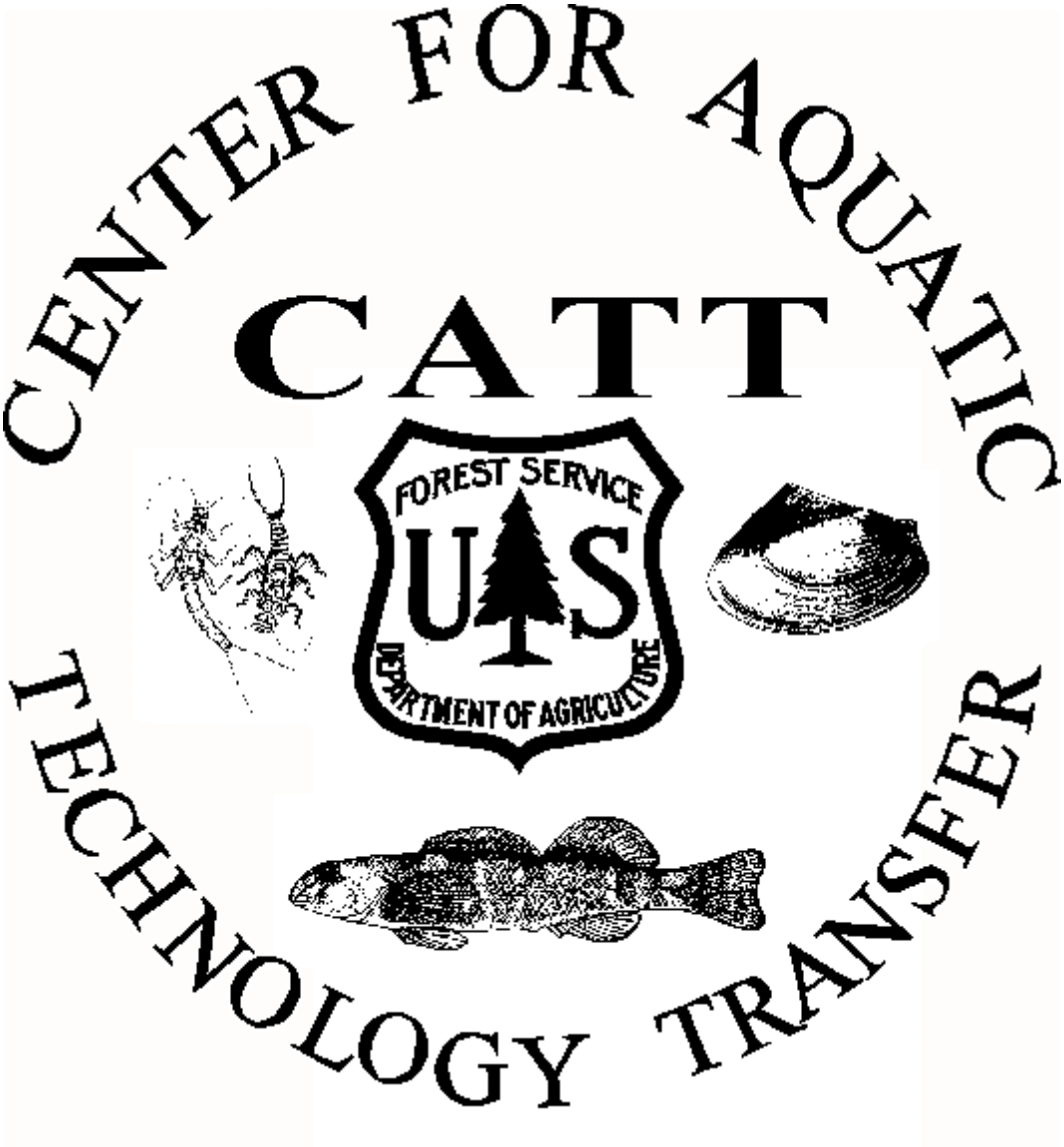
Condition of Streams in the South Fork Shenandoah River Drainage, 2002 - 2003, Dry River Ranger District, George Washington-Jefferson National Forest, VA



United States Department of Agriculture Forest Service
Southern Research Station
Center for Aquatic Technology Transfer

1650 Ramble Rd.
Blacksburg, VA 24060-6349

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Introduction

Throughout the summers of 2002-2003 we conducted stream habitat surveys on South Fork Shenandoah River drainage streams within the Dry River Ranger District, George Washington-Jefferson National Forest (GWJNF), Virginia, to quantify stream habitat conditions. Over 100 kilometers (62 miles) of stream habitat (29 streams) were classified and inventoried between 27 May and 23 August 2002, and 19 May and 15 August 2003 using Basinwide Visual Estimation Techniques (BVET) (Dolloff et. al 1993). We were unable to complete surveys on five streams due to lack of water (see Index of Stream Summaries). A multi-year drought likely increased the number of dewatered sections we encountered in many streams during summer 2002 (see features tables associated with each survey), and also affected water depth and surface area estimates, and habitat unit counts (Herger et al. 1996, Hilderbrand et al. 1999). Drought conditions did not persist into summer 2003.

We modified standard BVET methods to measure stream habitat parameters identified in the George Washington Forest plan. Included in the Forest plan is an outline of the desired-future-condition (DFC) for all the streams within the Forest[1]. The pertinent DFCs for the Forest include: woody debris loading - 78 to 186 pieces per kilometer, and percent pool habitat - 35 to 65 percent of the total stream habitat. We mistakenly reported the DFC for pool habitat as 30 to 70 percent of total stream habitat in previous reports.

The purpose of this report is to describe the current condition of Dry River Ranger District streams in a format useful to the Dry River Ranger District and the GWJNF. The enclosed report is intended to provide baseline information for Forest planning, habitat improvement projects, and land use decisions.

Methods

Surveys began at confluences for streams contained within National Forest boundaries and at the downstream USFS boundary for all other streams. Surveys were terminated when we encountered an upstream USFS boundary, or when the wetted channel was < 1 m average wetted width for > 500 m.

Two-stage visual estimation techniques were used to quantify habitat and DFCs in selected Dry River Ranger District streams. During the first stage habitat was stratified into similar groups based on naturally occurring habitat units including pools (areas in the stream with concave bottom profile, gradient equal to zero, greater than average depth, and smooth water surface), and riffles (areas in the stream with convex bottom profile, greater than average gradient, less than average depth, and turbulent water surface). Glides (areas in the stream similar to pools, but with average depth and flat bottom profile) were identified during the survey but were grouped with pools for data analysis. Runs (areas in the stream similar to riffles but with average depth, less turbulent flow, and flat bottom profile) and

[1]the GeorgeWashington portion of the GWJNF has a separate Forest plan and different DFCs from the Jefferson portion of the GWJNF

cascades (areas in the stream with > 12% gradient, high velocity, and exposed bedrock or boulders) were grouped with riffles for data analysis.

Habitat in each stream was classified and inventoried by a two-person crew. One crew member identified each habitat unit by type (as described above), estimated average wetted width, average and maximum depth, riffle crest depth (RCD), substrate composition, and percent fines. The length (0.1 m) of each habitat unit was measured with a hip chain. Average wetted width was visually estimated. Average and maximum depth of each habitat unit were estimated by taking depth measurements at various places across the channel profile with a graduated staff marked in 5 cm increments. The RCD was estimated by measuring water depth at the deepest point in the hydraulic control between riffles and pools. The RCD was subtracted from average pool depth to obtain an estimate of residual pool depth. Substrates were assigned to one of nine size classes. At the request of GWJNF we changed size classes in 2003 to match the modified Wentworth scale (see Appendix A). Dominant substrate (covered greatest amount of surface area in habitat unit) and subdominant substrate (covered 2nd greatest amount of surface area in habitat unit) were visually estimated. Percent fines was the percent of surface area of the stream bed that consisted of sand, silt, or clay substrate particles (particles < 2 mm diameter) and was only recorded in 2003.

The second crew member classified and inventoried large woody debris (LWD) within the stream channel, determined the Rosgen's channel type (see Appendix A) associated with each habitat unit, and recorded data on a Husky Fex21 data logger. LWD was assigned to one of four size classes (see Appendix A). All woody debris less than 1 m long and less than 10 cm in diameter were omitted from the survey. Rosgen's channel type was visually estimated using criteria found in Rosgen (1996).

The first unit of each habitat type selected for intensive (second stage) sampling (i.e. accurate measurement of wetted width) was determined randomly. Additional units were selected systematically (every 10th habitat unit type for streams >1000 m and every 5th habitat unit type for streams <500 m). The wetted width of each systematically selected habitat unit was measured with a meter tape across at least three transects. In each of the systematically selected (second stage) riffles we also estimated the bankfull stream channel width and riparian width, and measured channel gradient and water temperature. We estimated bankfull channel width by measuring the width of the bankfull channel perpendicular to flow. In 2002, we estimated riparian width by measuring from the edge of the bankfull channel to the intersection with the nearest landform at a predetermined flood stage. The flood stage was calculated from a formula specific to Virginia streams, based on watershed area. In 2003, we estimated riparian width by measuring from the edge of the bankfull channel to the intersection with the nearest landform at an elevation equal to two-times maximum bankfull depth as described by Rosgen (1996). Gradient was

estimated by using a clinometer to site from the downstream to the upstream end of the selected riffle. Water temperature was measured with a thermometer in flowing water out of direct sunlight.

We used the ratio of measured to estimated area to develop a calibration ratio, which allowed us to correct visual estimates and estimate stream area with confidence intervals (Hankin and Reeves 1988). BVET calculations were computed with a Microsoft Excel spreadsheet using formulas found in Dolloff et al. (1993). Data were summarized using Excel spreadsheets and SigmaPlot graphics software.

Literature Cited

Dolloff, C. A., D. G. Hankin, and G. H. Reeves. 1993. Basinwide estimation of habitat and fish populations in streams. General Technical Report SE-83. Asheville, North Carolina: U.S. Department of Agriculture, Southeastern Forest Experimental Station.

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Hilderbrand, RIGHT. H., A. D. Lemly, and C. A. Dolloff. 1999. Habitat sequencing and the importance of discharge in inferences. North American Journal of Fisheries Management 19:198-202.

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Acknowledgements

We would like to thank the CATT summer field crew for collecting all of the data presented in this report. The field crew included Josh Duty, Justin Homan, Chris Mueller, Brandon Price, Andrew Skelton, Shane Staples, Brian Stephens, Julie Still, and Nick Zetts. In addition, we thank Dawn Kirk, the Dry River Ranger District, and the GWJNF for providing assistance and funding for the surveys.

User's Guide

Stream summaries are organized in alphabetical order by U. S. Geological Survey (USGS) 1:24,000 Topographic Quadrangle, and then by stream name. The upper right hand corner of each page in the 'Stream Summaries' section contains the USGS quadrangle name for the selected stream.

Data for each stream section were collected, analyzed, and presented separately. Each stream or stream section summary contains:

1. several tables summarizing stream characteristics;
2. figures showing frequency of substrate types, area in pools and riffles, average, maximum, and residual depths, and LWD per kilometer;
3. table describing features encountered on the stream;
4. figures showing the distribution of LWD, substrate types, and Rosgen's channel types.

George Washington Forest DFCs are indicated on all pertinent tables and graphs.

We also included several summary tables (see 'Summary Tables' section) that summarize all data collected. The tables allow managers to quickly compare between Dry River Ranger District streams.

Summary Tables

Survey information and summary of general stream habitat characteristics for streams surveyed using the BVET habitat survey on the Dry River District during summer 2002-2003. NA = data was not recorded. No access = stream was not surveyed due to lack of access. 'Length' is total survey length, 'Width' is mean bankfull channel width, 'Gradient' is mean channel gradient, and 'Temperature' is mean water temperature.

Stream	Quad	Survey Date	Length (km)	Width (m)	Gradient (%)	Temperature (^{o}C)
Block Hollow	Brandywine	06/05/2003	3.2	6	10	13
Dunkle Hollow	Brandywine	06/03/2003	5.5	6	14	11
Railroad Hollow	Brandywine	06/03/2003	2.1	6	8	10
Skidmore Fork (lower)	Brandywine	06/04/2003	1.9	11	4	10
Skidmore Fork (upper)	Brandywine	06/04/2003	5.3	6	4	11
Timber Hollow	Brandywine	06/04/2003	2.5	5	8	13
Big Bear Hollow	Cow Knob	06/11/2003	2.3	13	10	13
Little Dry River*	Cow Knob	06/09/2003	0.3	12	4	16
Old Road Hollow	Cow Knob	06/09/2003	4.5	5	7	13
Sugar Run	Cow Knob	06/23/2003	2.4	16	6	12
Black Run (lower)	Rawley Springs	06/26/2003	0.7	10	4	16
Black Run (upper)	Rawley Springs	06/26/2003	8.0	8	7	15
Dry Run	Rawley Springs	07/23/2002	3.1	6	4	18
Gum Run	Rawley Springs	06/10/2003	5.7	7	10	14
Hopkins Hollow	Rawley Springs	07/24/2002	2.1	7	8	16
Kephart Run*	Rawley Springs	07/22/2002	0.8	NA	NA	18
Long Run	Rawley Springs	06/25/2003	5.6	6	5	16
Maple Spring Run	Rawley Springs	06/10/2003	4.8	6	9	14
Miller Spring Run	Rawley Springs	06/25/2003	2.8	6	6	13
Payne Run*	Rawley Springs	07/25/2002	NA	NA	NA	NA
Peach Run*	Rawley Springs	07/25/2002	0.5	6	5	18
Raccoon Run	Rawley Springs	07/25/2002	1.5	5	13	NA
Rocky Run	Rawley Springs	07/22/2002	2.9	6	6	16
Sand Run	Rawley Springs	07/24/2002	2.6	5	5	NA
Briery Branch (lower)	Reddish Knob	07/15/2003	3.1	9	3	22
Briery Branch (upper)	Reddish Knob	07/16/2003	1.8	8	4	18
Coal Run	Reddish Knob	08/05/2003	1.0	5	9	18
Hogpen Run *	Reddish Knob	08/05/2003	NA	NA	NA	NA
Hone Quarry (lower)	Reddish Knob	07/15/2003	3.5	12	2	18
Hone Quarry (upper)	Reddish Knob	07/16/2003	5.5	8	3	17
Mines Run	Reddish Knob	07/16/2003	3.6	7	3	19
Broad Run	Stokesville	07/23/2002	4.6	6	4	22
North River	Stokesville/West Augusta	06/24/2002	6.9	16	2	17

*incomplete survey- lack of water

Summary of pool habitat characteristics for streams surveyed using the BVET habitat survey on the Dry River District during summer 2002 - 2003. The George Washington National Forest DFC is between 35% and 65% of total stream area in pools. NA = could not be calculated. 'Total Area (%)' is percent of total stream surface area in pools (includes glides), 'Total Area (m^2)' is surface area of stream in pools, 'Mean Area' is mean surface area of individual pools, 'Mean Max Depth' is the mean maximum depth of all pools, 'Mean Ave Depth' is mean average depth of all pools, 'Mean Resid Depth' is mean residual depth of all pools, 'Glides' is percent of pool habitat units surveyed as glides, '>35% Fines is percent of pools with greater than 35% of substrate materials < 2 mm in diameter.

Stream	**Total Area (%)**	**Total Area (m^2)**	**Total Count (n)**	**# per km**	**Mean Area (m^2)**	**Mean Max Depth (cm)**	**Mean Ave Depth (cm)**	**Mean Resid Depth (cm)**	**Glides (%)**	**>35% Fines (%)**
Block Hollow	18	1691	126	39	13	44	29	6	29	10
Dunkle Hollow	17	3461	122	22	28	45	29	9	8	11
Railroad Hollow	16	841	69	32	12	32	18	3	26	10
Skidmore Fork (lower)	40	5321	43	23	124	53	32	13	2	9
Skidmore Fork (upper)	19	3555	127	24	28	49	34	16	0	2
Timber Hollow	9	391	51	20	8	26	17	6	43	20
Big Bear Hollow	32	2664	65	28	41	52	34	18	0	0
Little Dry River*	NA	NA	2	7	NA	88	68	35	NA	NA
Old Road Hollow	12	1312	62	14	21	36	25	9	0	2
Sugar Run	17	1060	56	23	19	53	35	15	23	38
Black Run (lower)	35	2076	15	22	138	85	54	23	33	13
Black Run (upper)	33	8967	158	20	57	54	36	25	1	4
Dry Run	19	1293	54	18	24	35	23	12	4	**
Gum Run	19	4470	168	30	27	46	31	5	26	11
Hopkins Hollow	42	1115	56	27	20	29	18	15	9	**
Kephart Run*	NA	41	4	5	10	23	13	NA	NA	**
Long Run	22	3693	86	15	43	54	36	19	2	8
Maple Spring Run	10	1657	73	15	23	56	40	13	5	34
Miller Spring Run	23	2463	88	31	28	46	29	10	24	65
Payne Run*	NA	NA	NA	NA	NA	NA	NA	NA	NA	**
Peach Run*	26	23	5	10	5	28	16	16	NA	**
Raccoon Run	36	672	63	42	11	29	17	13	8	**
Rocky Run	40	923	56	19	16	38	20	9	13	**
Sand Run	26	694	52	20	13	35	19	8	10	**
Briery Branch (lower)	43	7474	68	22	110	53	28	12	51	6
Briery Branch (upper)	9	679	27	15	25	46	24	10	33	4
Coal Run	42	674	43	42	16	38	22	11	30	12
Hogpen Run *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hone Quarry (lower)	28	4306	48	14	90	64	41	25	13	31
Hone Quarry (upper)	27	1472	32	6	46	50	30	18	9	22
Mines Run	16	1268	55	15	23	32	19	8	71	9
Broad Run	36	3094	146	32	21	26	16	12	14	**
North River	43	12089	116	17	104	53	36	25	9	**

* incomplete survey- lack of water

** data not collected in 2002

Summary of riffle habitat characteristics for streams surveyed using the BVET habitat survey on the Dry River District during summer 2002 - 2003. NA = could not be calculated. 'Total Area (%)' is percent of total stream surface area in riffles (includes runs and cascades), 'Total Area (m^2)' is surface area of stream in riffles, 'Mean Area' is mean surface area of individual riffles, 'Mean Max Depth' is the mean maximum depth of all riffles, 'Mean Ave Depth' is mean average depth of all riffles, 'Runs' is percent of riffle habitat units surveyed as runs, 'Cascades' is percent of riffle habitat units surveyed as cascades.

Stream	Total Area (%)	Total Area (m^2)	Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Ave Depth (cm)	Runs (%)	Cascades (%)
Block Hollow	82	7584	115	35	66	34	20	0	10
Dunkle Hollow	83	16417	128	23	128	28	16	9	12
Railroad Hollow	84	4397	60	28	73	21	10	2	0
Skidmore Fork (lower)	60	8015	32	17	250	25	14	3	0
Skidmore Fork (upper)	81	15450	121	23	128	30	18	5	10
Timber Hollow	91	4142	53	21	78	19	10	0	2
Big Bear Hollow	68	5682	73	32	78	31	20	3	32
Little Dry River*	NA	965	3	10	322	38	23	0	0
Old Road Hollow	88	9272	77	17	120	29	18	9	3
Sugar Run	83	5285	53	22	100	34	14	0	4
Black Run (lower)	65	3850	11	16	350	62	34	9	0
Black Run (upper)	67	18447	129	16	143	30	17	4	4
Dry Run	81	5458	56	18	97	19	11	0	0
Gum Run	81	19513	155	27	126	36	20	1	19
Hopkins Hollow	58	1544	44	21	35	15	8	2	2
Kephart Run*	NA	NA	1	1	NA	10	5	0	0
Long Run	78	13237	70	12	189	30	18	3	4
Maple Spring Run	90	14381	74	15	194	39	19	1	11
Miller Spring Run	77	8229	79	28	104	29	14	1	0
Payne Run*	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peach Run*	74	65	6	12	11	10	6	0	0
Raccoon Run	64	1201	60	40	20	15	7	12	5
Rocky Run	60	1388	52	18	27	15	6	0	0
Sand Run	74	1939	52	20	37	13	5	2	6
Briery Branch (lower)	57	9756	52	17	188	35	16	4	0
Briery Branch (upper)	91	6968	24	13	290	31	13	0	0
Coal Run	58	937	40	39	23	12	6	0	5
Hogpen Run *	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hone Quarry (lower)	72	11318	49	14	231	29	18	8	0
Hone Quarry (upper)	73	3916	36	7	109	22	10	0	6
Mines Run	84	6896	55	15	125	21	9	2	0
Broad Run	64	5559	117	26	48	12	6	9	0
North River	57	16002	96	14	167	20	13	2	0

*incomplete survey- lack of water

Summary of LWD per km and Rosgen's channel types for streams surveyed using the BVET habitat survey on the Dry River District during summer 2002 - 2003. The GWJNF DFC for total LWD is – 78 to 186 pieces per km. NA = data not recorded. LWD sizes: 1) <5 m long, <55 cm diameter, 2) < 5 m long, >55 cm diameter, 3) >5 m long, <55 cm diameter, 4) >5 m long, >55 cm diameter. See Appendix A for description of Rosgen channel types.

Stream	**Large Woody Debris per km**					**Rosgen's Channel Type**						
	1	**2**	**3**	**4**	**Total**	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Block Hollow	75	4	72	8	159	51	29	0	0	0	20	0
Dunkle Hollow	48	1	77	11	136	0	40	20	0	0	40	0
Railroad Hollow	67	16	61	7	152	74	17	0	0	0	9	0
Skidmore Fork (lower)	20	4	49	10	84	0	87	0	0	0	13	0
Skidmore Fork (upper)	85	1	86	5	177	17	83	0	0	0	0	0
Timber Hollow	59	7	50	8	124	60	17	0	0	0	23	0
Big Bear Hollow	68	1	64	5	139	38	62	0	0	0	0	0
Little Dry River*	87	0	114	0	201	0	0	0	0	0	100	0
Old Road Hollow	38	2	31	6	78	15	85	0	0	0	0	0
Sugar Run	100	0	113	5	218	68	2	0	0	0	30	0
Black Run (lower)	75	0	103	0	178	0	100	0	0	0	0	0
Black Run (upper)	47	0	58	8	114	26	74	0	0	0	0	0
Dry Run	65	4	40	13	122	0	100	0	0	0	0	0
Gum Run	85	3	110	11	209	62	25	0	0	0	13	0
Hopkins Hollow	123	11	93	9	236	0	100	0	0	0	0	0
Kephart Run*	1	0	1	0	3	0	100	0	0	0	0	0
Long Run	77	0	38	5	119	2	98	0	0	0	0	0
Maple Spring Run	121	4	48	32	206	7	93	0	0	0	0	0
Miller Spring Run	106	1	88	10	205	0	15	0	0	0	85	0
Payne Run*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peach Run*	10	0	2	0	12	0	100	0	0	0	0	0
Raccoon Run	164	4	80	3	250	100	0	0	0	0	0	0
Rocky Run	33	6	33	15	87	33	67	0	0	0	0	0
Sand Run	13	9	2	3	26	0	0	0	0	0	100	0
Briery Branch (lower)	115	0	63	1	179	0	68	0	0	0	32	0
Briery Branch (upper)	84	0	72	3	159	0	33	0	0	0	67	0
Coal Run	128	3	116	6	253	13	0	0	0	0	88	0
Hogpen Run *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hone Quarry (lower)	20	1	15	4	39	0	98	2	0	0	0	0
Hone Quarry (upper)	2	0	6	3	10	0	35	0	0	0	65	0
Mines Run	22	1	40	2	65	0	58	0	0	0	42	0
Broad Run	86	2	42	2	131	0	18	69	0	0	0	13
North River	44	0	14	0	58	0	8	92	0	0	0	0

*incomplete survey- lack of water

Summary of riparian width calculations for streams surveyed using the BVET habitat survey on the Dry River District during summer 2002 - 2003. The left riparian width, right riparian width, and bankfull channel widths were added together before values for 'Riparian Width Total' were calculated. Left and right riparian widths were pooled together before values for 'Riparian Left & Right Width' were calculated.

Stream	Riparian Width Total (m)					Riparian Left & Right Width (m)				
	Mean	Max	75th	25th	Min	Mean	Max	75th	25th	Min
Block Hollow	13	23	16	9	6	4	13	6	1	0
Dunkle Hollow	9	13	11	8	4	2	7	2	1	0
Railroad Hollow	15	28	19	9	8	4	16	6	1	0
Skidmore Fork (lower)	13	14	14	12	11	1	2	1	1	1
Skidmore Fork (upper)	11	17	13	9	8	3	9	4	1	0
Timber Hollow	7	12	7	5	4	1	4	1	0	0
Big Bear Hollow	13	18	15	11	7	2	8	3	0.9	0.4
Little Dry River*	13	13	13	13	13	1	1	1	0	0
Old Road Hollow	8	13	9	7	5	2	7	2	1	0
Sugar Run	20	65	12	6	6	2	8	2	0	0
Black Run (lower)	30	41	35	24	19	10	20	14	5	3
Black Run (upper)	17	26	23	11	5	4	17	5	1	0
Dry Run	19	42	22	11	9	6	27	7	2	1
Gum Run	14	28	17	9	6	4	18	7	1	0
Hopkins Hollow	14	17	15	12	11	3	9	4	1	1
Kephart Run*	NA	0	NA	NA	0	NA	0	NA	NA	0
Long Run	10	11	10	9	9	2	6	2	1	0
Maple Spring Run	12	15	13	10	8	3	8	3	1	1
Miller Spring Run	11	16	11	9	7	2	9	2	1	0
Payne Run*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peach Run*	11	11	11	11	11	2	4	3	2	1
Raccoon Run	11	14	12	9	9	3	9	3	1	1
Rocky Run	18	33	17	12	11	6	14	7	3	1
Sand Run	11	14	13	10	8	3	7	4	2	0
Briery Branch (lower)	18	40	22	10	9	5	28	4	1	1
Briery Branch (upper)	9	9	9	9	9	1	1	1	0	0
Coal Run	11	15	13	11	7	3	8	6	1	1
Hogpen Run *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hone Quarry (lower)	19	24	20	16	15	3	13	3	1	1
Hone Quarry (upper)	9	12	10	8	7	1	1	1	1	1
Mines Run	17	53	16	7	6	5	45	3	1	0
Broad Run	14	23	19	8	7	4	14	6	1	1
North River	66	108	92	36	20	26	67	37	6	1

* incomplete survey – lack of water

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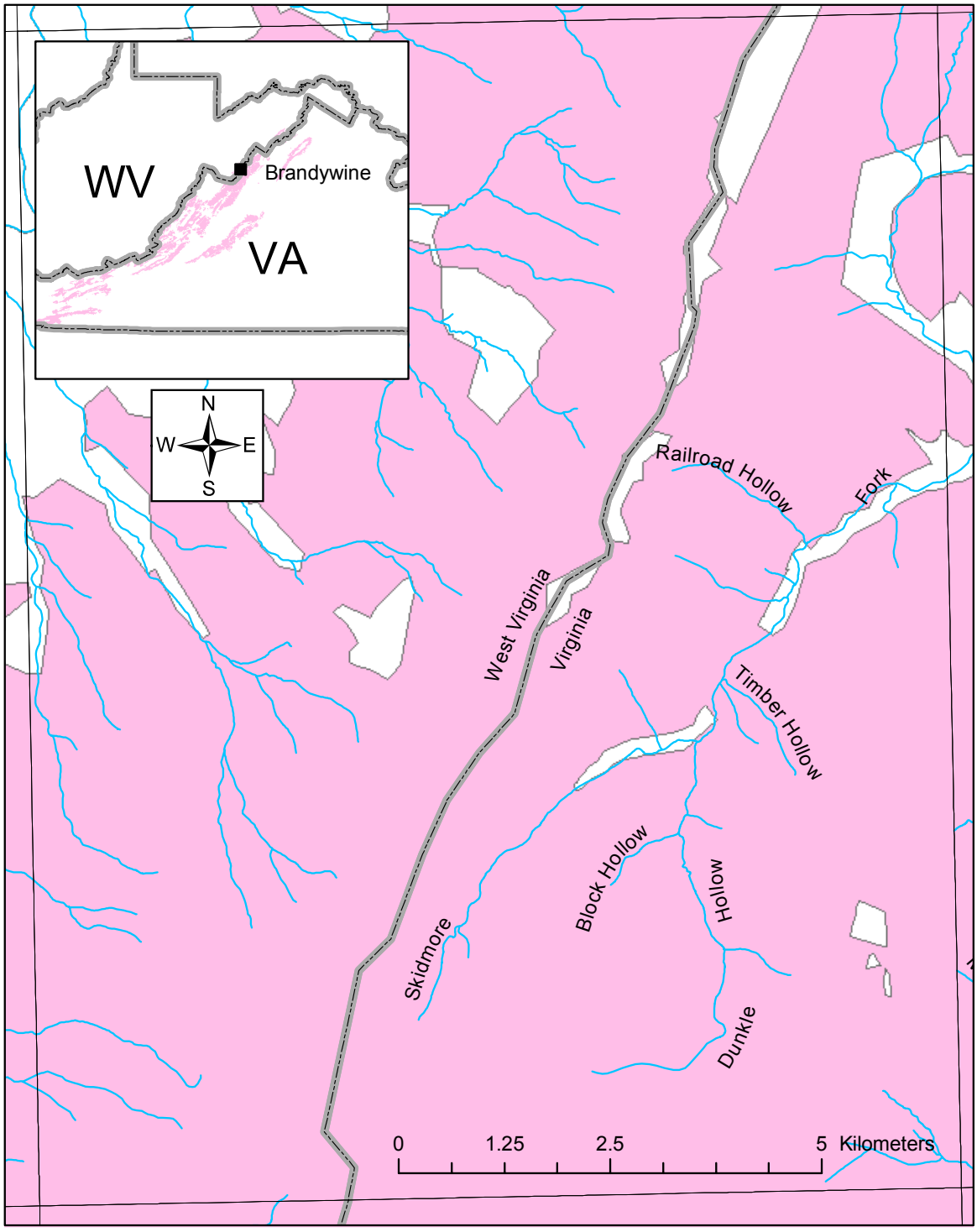
*incomplete survey- lack of water

Stream Summaries



Streams inventoried on the Brandywine Quadrangle using BVET habitat surveys during summer 2003.

Stream:	**Block Hollow**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/05/03
Downstream Starting Point:	Confluence of Block Hollow and Skidmore Fork
Total Distance Surveyed (km):	3.2

	Pools	**Riffles**
Percent of Total Stream Area:	18	82
Total Area (m^2):	1691±211	7584±1020
Correction Factor Applied:	1.09	1.16
Number of Paired Samples:	12	11
Total Count:	126	115
Number per km:	39	35
Mean Area (m^2):	13	66
Mean Maximum Depth (cm):	44	34
Mean Average Depth (cm):	29	20
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:	29	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	10
Percent with >35% Fines:	10	1

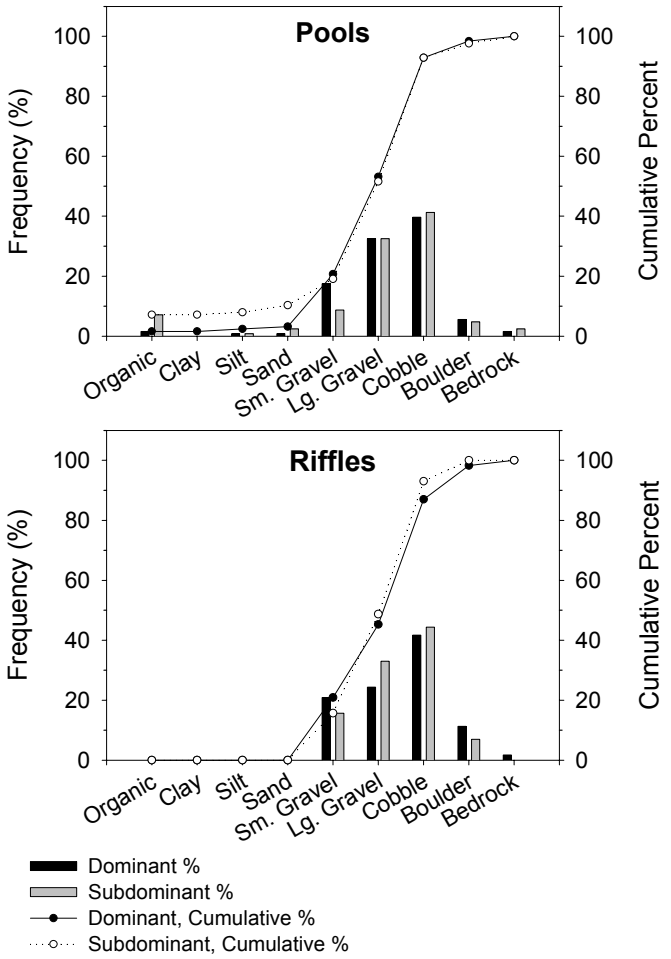
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	75
< 5 m long, > 55 cm diameter:	4
> 5 m long, 10 cm – 55 cm diameter:	72
> 5 m long, > 55 cm diameter:	8
Total:	159

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	13	4
Maximum	23	13
75^{th} Percentile	16	6
25^{th} Percentile	9	1
Minimum	6	0

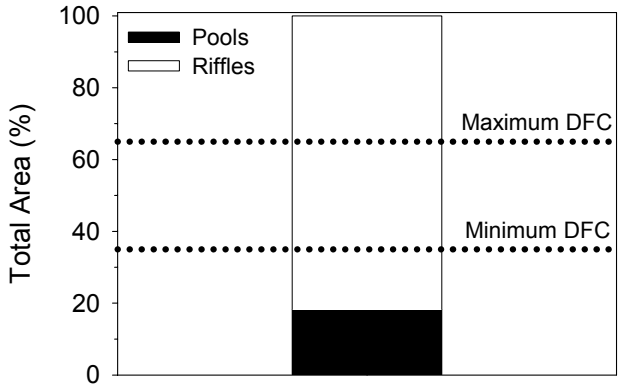
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	51
B:	29
C:	0
D:	0
E:	0
F:	20
G:	0

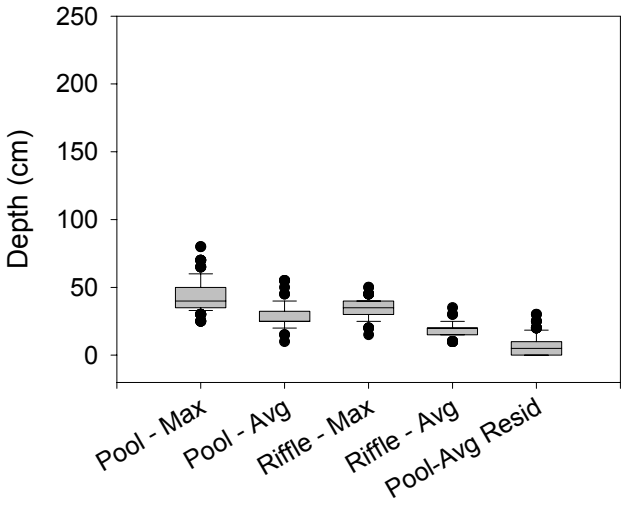
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	10
Median Water Temperature (C):	13



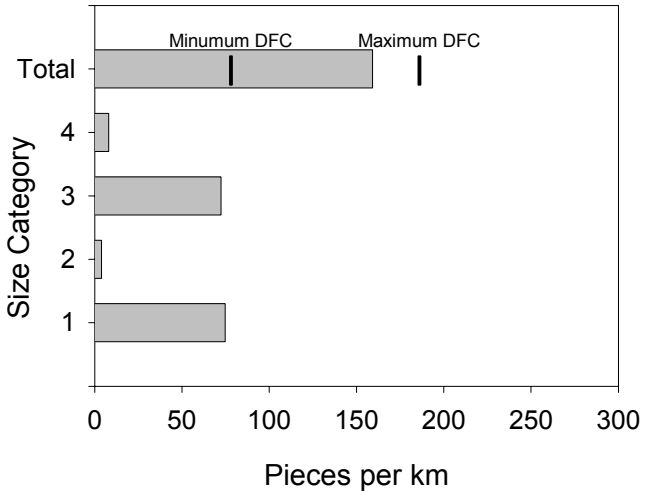
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Block Hollow, summer 2003.



Estimated area of Block Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Block Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

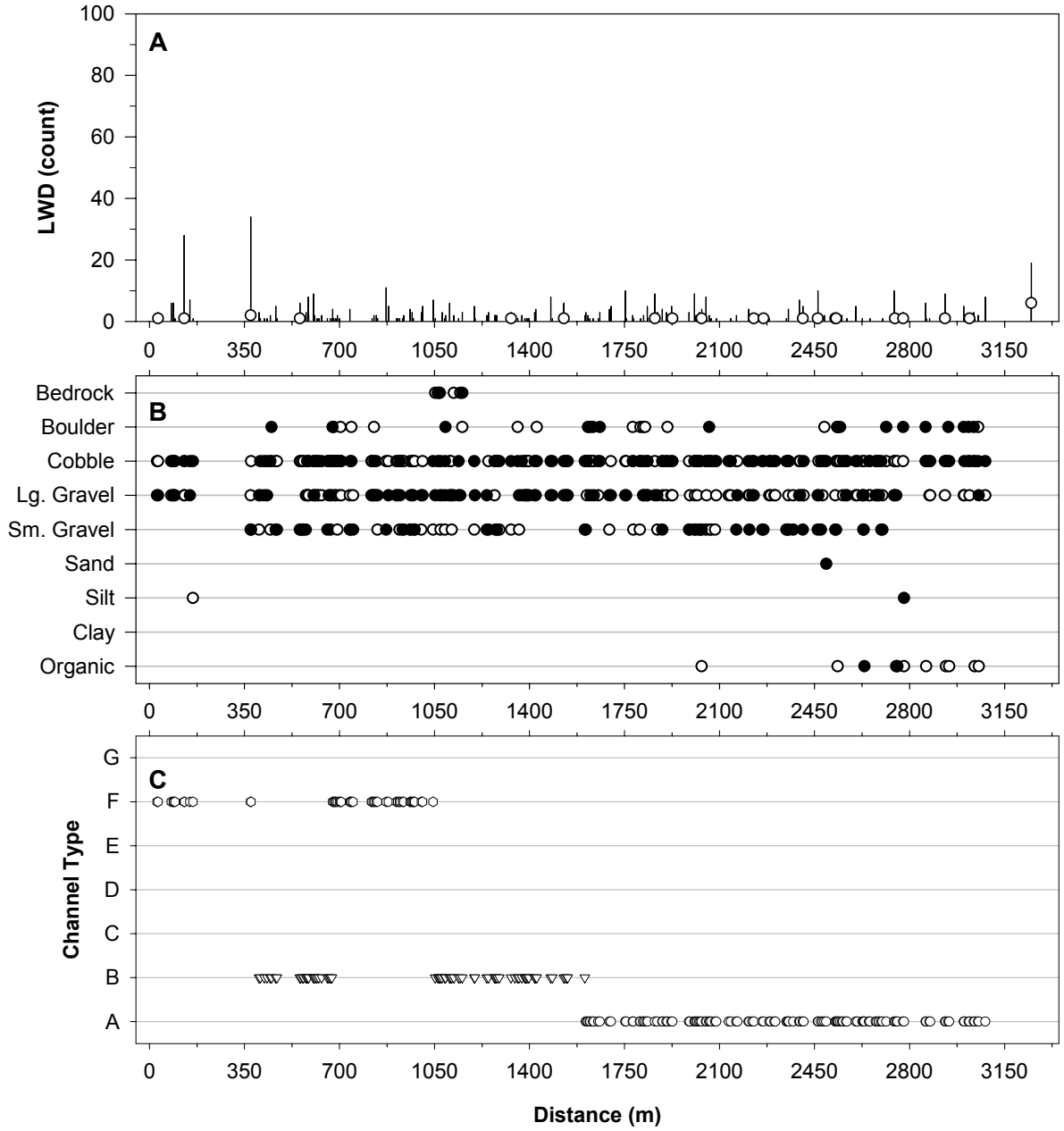


LWD per kilometer in Block Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Block Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	21.9		USFS ROAD 227
Seep	54.2		ON LEFT, SMALL FLOW
Other	59.3		ON THE RIGHT IT SEEMS TO BE THE REMENANCE OF A SAW MILL ABOUT 30 YEARS AGO, THE STACK OF LUMBER IS ABOUT 15 FEET HIGH AND IS VERY ODD
Seep	199		LEFT, COULD BE UNDER GROUND SIDE CHANNEL
Tribuatary	362.4		DRY TRIB BED
Seep	374.4		SPRING, LEFT
Side Channel	464.8	1	IN LEFT
Side Channel	479.7		OUT UNDERGROUND
Ford	484.7		TRAIL CROSSING, NOW ON RIGHT SIDE OF STREAM
Side Channel	553.2		IN LEFT, 1.5 M WIDE
Side Channel	578.1	3	OUT LEFT
Tribuatary	790.8		VERY DISTINCT ON QUAD, CONTRIBUTES A LOT OF WATER
Tribuatary	839.9		RIGHT
Seep	852		STARTS ABOUT 30 M RIGHT ON THE TRAIL
Side Channel	874	1	OUT LEFT
Seep	889.5		SPRING LEFT,ITS A GUSHER
Seep	914		RIGHT, TRICKLING OUT
Ford	926		TRAIL CROSSING, TRAIL NOW ON LEFT
Seep	929.2		TRICKLE
Ford	994.4		TRAIL CROSING, TRAIL ON RIGHT
Seep	1003.2		HIGH FLOW FOR A SEEP, GUSHING OUT OF MOUNTAIN
Seep	1067.5		1 METER AND FLOWING STRONG, SPRING
Side Channel	1071.7		OUT RIGHT
Side Channel	1093		IN RIGHT
Seep	1113.4		LEFT SIDE, TRICKE
Seep	1115		SPRING, RIGHT
Tribuatary	1266.5		UNDERGROUND BUT IS FLOWING ABOUT 50 METERS UP CHANNEL, ON RIGHT
Side Channel	1317.8	2.5	LEFT
Side Channel	1356		OUT UNDERGROUND LEFT
Side Channel	1444.4		IN RIGHT, NOT MUCH OF A BREAK
Side Channel	1480		SCH ENTER UNDERGROUND



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Block Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence of Block Hollow and Skidmore Fork. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Dunkle Hollow**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/03/03
Downstream Starting Point:	Confluence of Skidmore Fork
Total Distance Surveyed (km):	5.5

	Pools	**Riffles**
Percent of Total Stream Area:	17	83
Total Area (m^2):	3461±248	16417±930
Correction Factor Applied:	1.08	1.03
Number of Paired Samples:	12	13
Total Count:	122	128
Number per km:	22	23
Mean Area (m^2):	28	128
Mean Maximum Depth (cm):	45	28
Mean Average Depth (cm):	29	16
Mean Residual Depth (cm):	9	--
Percent Surveyed as Glides:	8	--
Percent Surveyed as Runs:	--	9
Percent Surveyed as Cascades:	--	12
Percent with >35% Fines:	11	1

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	48
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	77
> 5 m long, > 55 cm diameter:	11
Total:	136

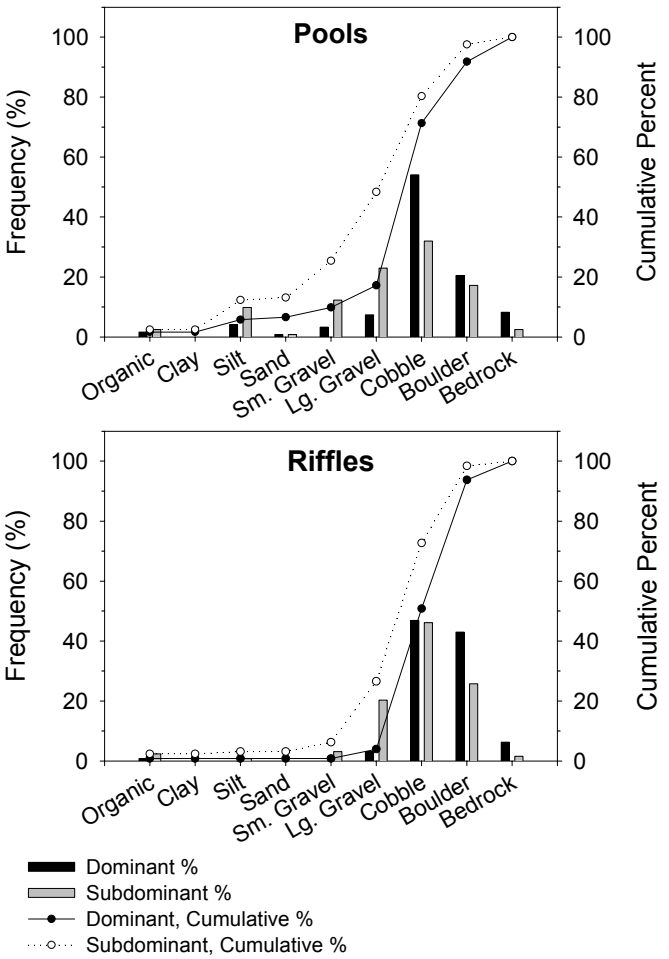
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	9	2
Maximum	13	7
75th Percentile	11	2
25th Percentile	8	1
Minimum	4	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

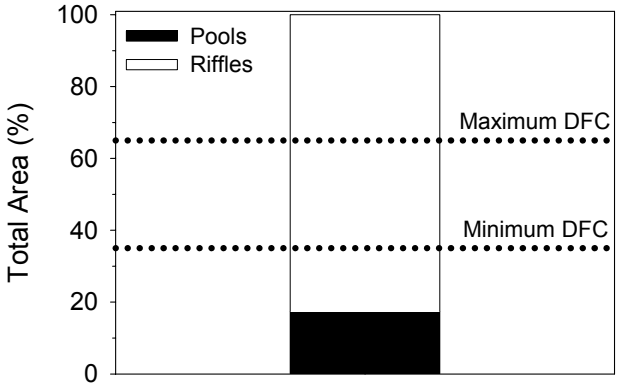
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	40
C:	20
D:	0
E:	0
F:	40
G:	0

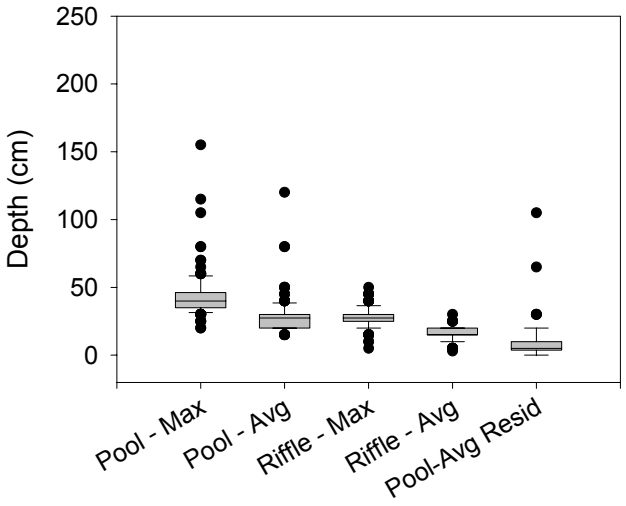
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	14
Median Water Temperature (C):	11



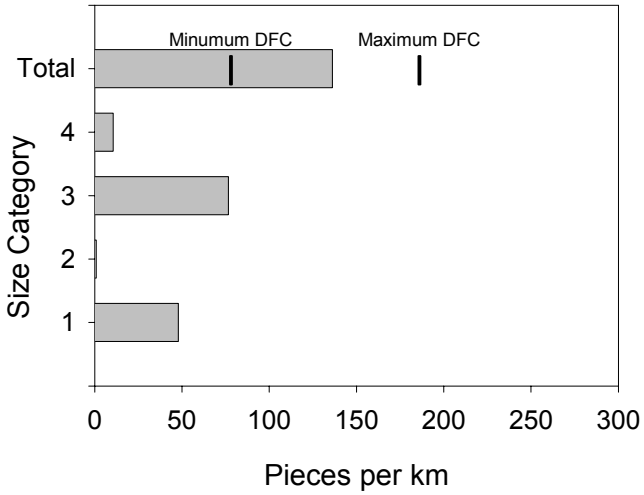
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Dunkle Hollow, summer 2003.



Estimated area of Dunkle Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Dunkle Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



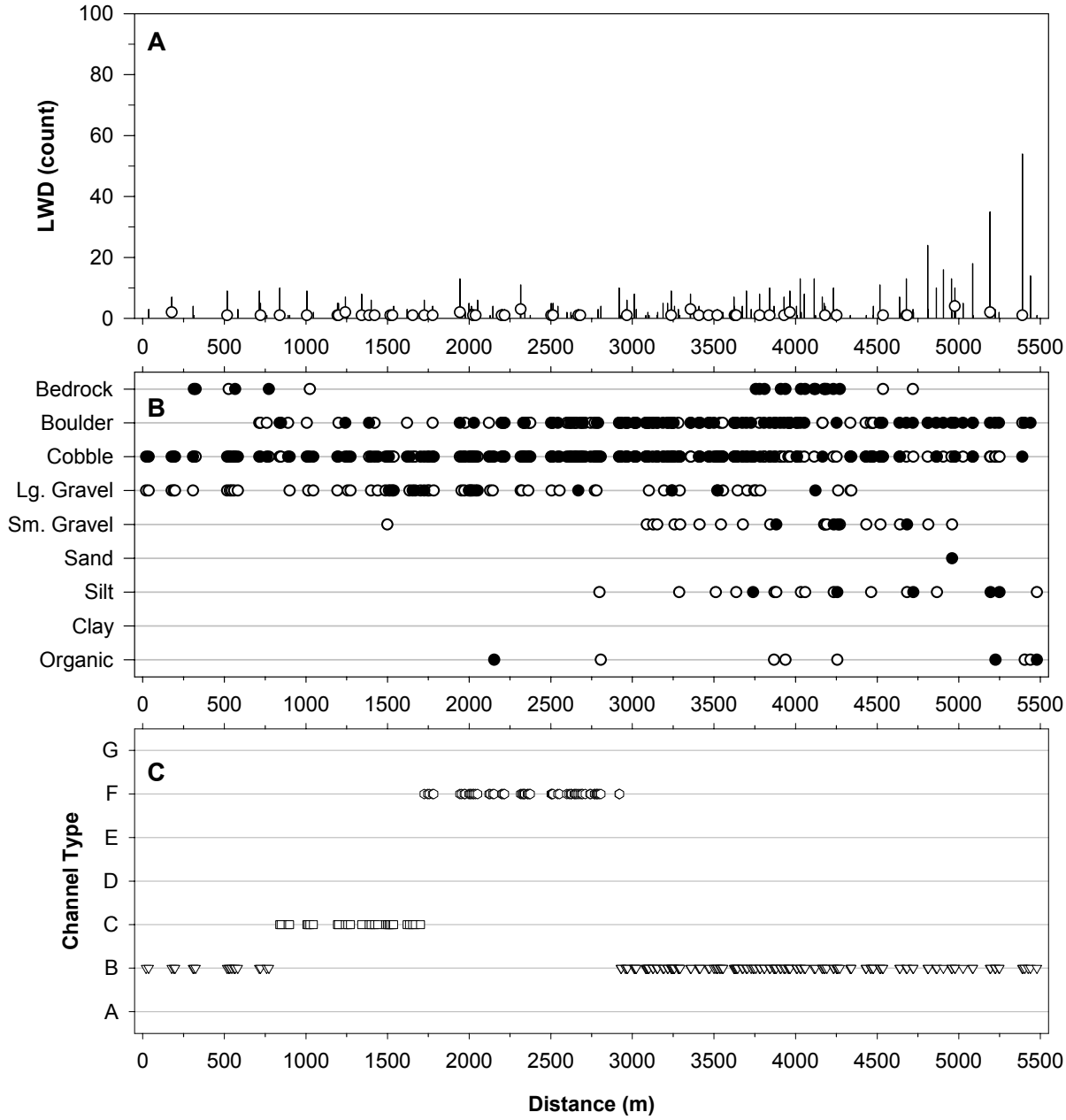
LWD per kilometer in Dunkle Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Dunkle Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	177	10	ROAD CROSSING
Side Channel	774.8	1	IN ON LEFT
Side Channel	785.8	1	IN ON RIGHT
Side Channel	814.6	0.5	IN ON RIGHT
Side Channel	837.9	3	OUT ON RIGHT
Side Channel	997		EXIT LEFT UNDERBROUND
Tribuatary	1037.7	0.5	IN ON LEFT CAMPSITE ON RIGHT BANK
Side Channel	1042.9	0.5	IN ON LEFT
Side Channel	1059.4	1	IN ON LEFT
Tribuatary	1255.8	3	ENTERS STREAM ON RIGHT, INTERSECTS ROAD BEFORE ENTERING STREAM
Side Channel	1262.5		ENTERS RIGHT DRY
Side Channel	1343.5	1.5	IN ON RIGHT
Side Channel	1379.4	2	OUT ON RIGHT, STREAM BRAIDED FOR SECTION ABOUT 30M,STANDING TIMBER IN STREAM BED
Side Channel	1547.1	1	IN ON LEFT TRICKLE AND UNDERGROUND
Side Channel	1619.3	1	OUT ON LEFT THEN GOES UNDERGROUND AFTER 10M
Side Channel	1758.1	1.5	IN ON RIGHT
Side Channel	1836.6	4	IN ON LEFT WITH LARGE WOODY DEBRIS
Side Channel	1858.6	2	IN ON LEFT
Side Channel	1882.8		EXITS RIGHT UNDERGROUND
Side Channel	1911.8	0.5	ENTERS RIGHT,
Side Channel	1943.3		EXITS RIGHT UNDERRGROUND
Side Channel	1968.9	1.5	ENTERS RIGHT SPLITS AFTER 15M
Side Channel	2083.4	1.5	IN ON RIGHT
Ford	2117	5	OLD ROADBED, LOOKS UNUSED
Side Channel	2117.2	4	OUT ON RIGHT
Other	2145		SMALL ROCK DAM 1M HIGH MAY BE OLD TRAIL CROSSING
Side Channel	2189.8	1	SEMI UNDERGROUND
Seep	2215.5		SEEP COMES FROM UNDER ROCKS NEAR WETTED CHANNEL,FAIRLY HEAVY FLOW
Side Channel	2260.1		EXITS RIGHT UNDERGROUND
Tribuatary	2327.2	2.5	SIDE CHANNEL OF MAIN STREAM ENTERS TRIB 20M BEFORE TRIB ENTERS STREAM
Side Channel	2370.2	1	SOME UNDERGROUND AND SOME TRICKLE ABOVE GROUND
Side Channel	2676.8	1.5	ENTERS LEFT
Side Channel	2695	2	EXITS LEFT
Tribuatary	2783.4	3	ENTERS LEFT , SOME SILT
Tribuatary	2939.2	2.5	LARGE TRIB ENTERS LEFT AT FORK IN STREAM WHERE RIDGE LINE STARTS
Tribuatary	3050.8	1.5	ENTERS STREAM ALMOST UNDER GROUND BUT APPEARS TO HAVE STRONG FLOW 15M ABOVE WHERE IT ENTERS STREAM ON RIGHT
Side Channel	3238.8	1.5	ENTERS RIGHT

Side Channel	3316.3		EXITS RIGHT AT A TRICKLE AND GOES UNDERGROUND
Side Channel	3527.6	1	ENTERS LEFT
Side Channel	3535.5	1.5	EXITS RIGHT
Tribuatary	3692	0.5	ENTERS RIGHT
Side Channel	3800.2	1	ENTERS LEFT
Side Channel	3832	1	EXITS LEFT WITH LOTS OF 3LWD
Side Channel	3953	1.5	ENTERS RIGHT
Tribuatary	4033.8	1.5	TRIB COME OFF MOUNTAIN AND ENTERS SIDE CHANNEL ABOUT 5M BEFORE THEY BOTH CONVERGE WITH MAIN STREAM, MOSLTY BEDROCK WHERE ENTERS STREAM
Fall	4100.6	1.5	BEDROCK WATERFALL ABOUT 2M HIGH
Tribuatary	4137.5	3	TRIB ENTERS LEFT, SMALL POOL AT BOTTOM OF TRIB BEFORE ENTERS STREAM, TRIB IS A HIGH FLOWING CASCADE THAT STARTS GOIN UPHILL FAST
Seep	4404.3		SEEP AS SMALL TRICKLE JUST BEFORE
Culvert	4404.3	0.8	LWD IS FOR RIFFLE BELOW CULVERT,ROOTWAD IS A STUMP BY ITSELF
Side Channel	4499.3	1.5	ENTERSLEFT
Side Channel	4590.3	1	IN ON RIGHT
Side Channel	4599.6	1.5	OUT ON RIGHT
Side Channel	4775.2	1	ENTER RIGHT
Side Channel	4795.7	1	EXITS RIGHT
Tribuatary	4960.5	1	ENTERS LEFT HEAVY FLOW FROM RAIN
Side Channel	5007.3	0.5	EXITS LEFT GOES UNDER A BIG BOULDER
Side Channel	5056.4		EXITS LEFT
Culvert	5444.8	0.5	STEEL CIRCULAR PIPE WITH GOOD FLOW
Other	5464.1	20	POND BEGINS WHERE CULVERT ENDS,
Other	5494		STREAM UNDERGROUND BEFOREIT HITS ROAD
Other			HIGH MOUNTIAN BRAIDED CHANNEL, BRAID IS VERY DISTINCT 4 CHANNELS



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Dunkle Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from the confluence of Skidmore Fork. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Railroad Hollow**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/03/03
Downstream Starting Point:	where Railroad Hollow flows into Skidmore Reservoir
Total Distance Surveyed (km):	2.1

	Pools	**Riffles**
Percent of Total Stream Area:	16	84
Total Area (m^2):	841±118	4397±593
Correction Factor Applied:	0.94	1.13
Number of Paired Samples:	7	6
Total Count:	69	60
Number per km:	32	28
Mean Area (m^2):	12	73
Mean Maximum Depth (cm):	32	21
Mean Average Depth (cm):	18	10
Mean Residual Depth (cm):	3	--
Percent Surveyed as Glides:	26	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	10	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	67
< 5 m long, > 55 cm diameter:	16
> 5 m long, 10 cm – 55 cm diameter:	61
> 5 m long, > 55 cm diameter:	7
Total:	152

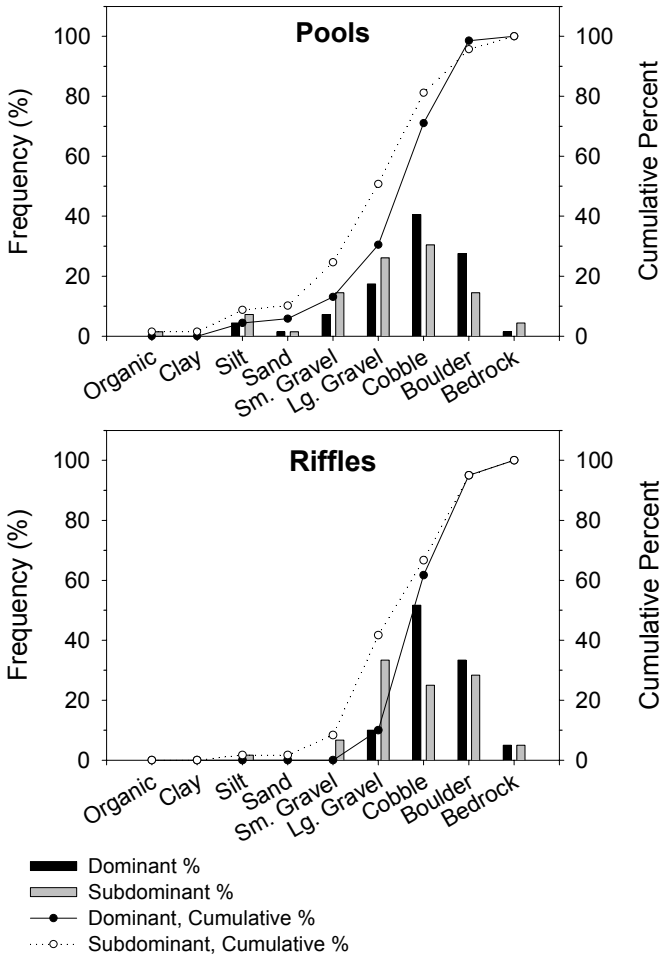
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	15	4
Maximum	28	16
75th Percentile	19	6
25th Percentile	9	1
Minimum	8	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

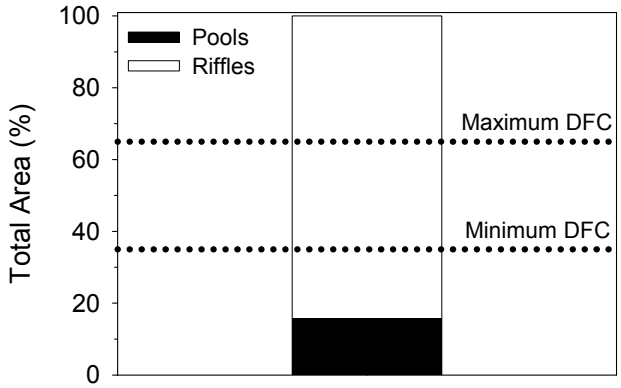
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	74
B:	17
C:	0
D:	0
E:	0
F:	9
G:	0

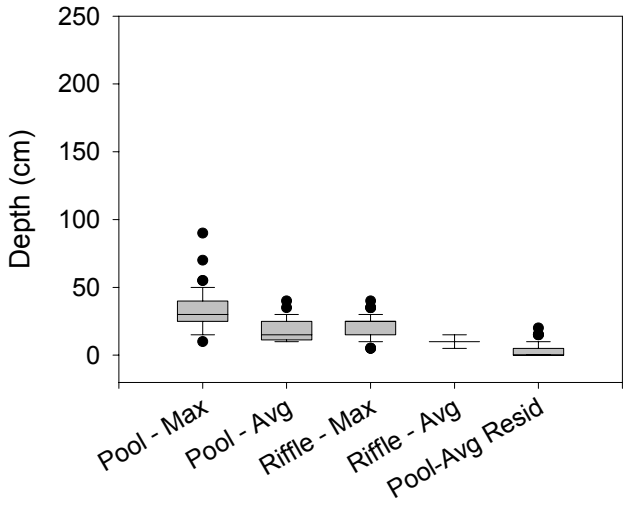
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	8
Median Water Temperature (C):	10



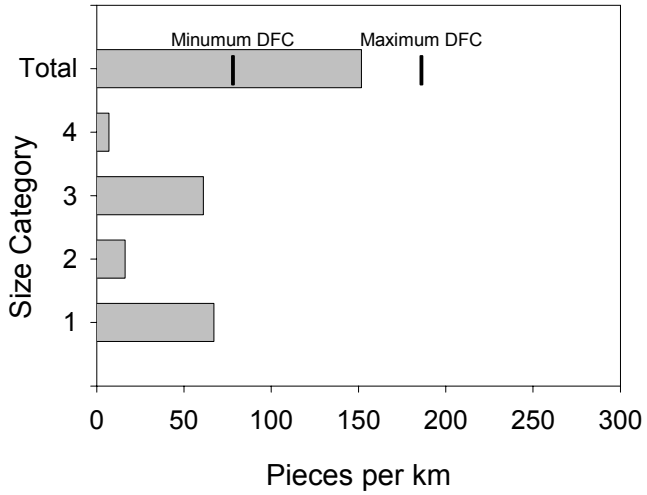
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Railroad Hollow, summer 2003.



Estimated area of Railroad Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Railroad Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

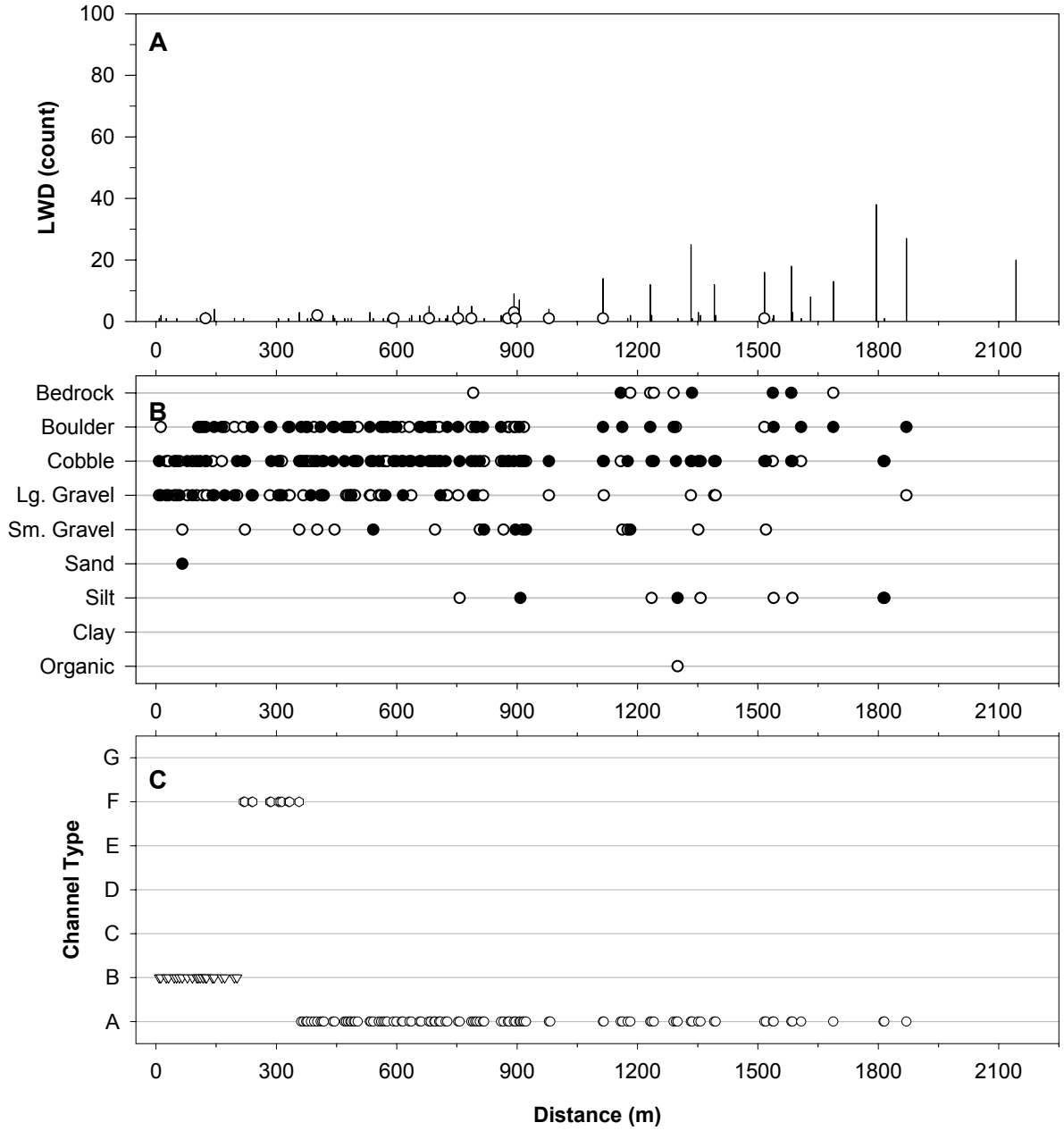


LWD per kilometer in Railroad Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Railroad Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	65.6		IN RIGHT ESTIMATED WIDTH ONE METER
Culvert	244		WET WIDTH COMING OUT IS 1.5 METERS AND THE ACTUAL SIZE OF CULVERT IS 3.5 METERS IN DIAMETER. CULVERT LENTH IS 24 METERS LONG.
Side Channel	710		OUT LEFT 1.5 METERS WIDE
Side Channel	734		IN LEFT, COMES IN UNDERGROUND
Side Channel	805		WIDTH IS .2 METERS
Side Channel	873	1.2	COMING IN ON RIGHT
Side Channel	946		UNDERGROUND, IN SIDE CHANNEL THERE IS A DRY TRIB
Seep	1116		LEFT SIDE
Tributary	1291	0.2	RIGHT, CONFLUENCE
Tributary	1607.7	0.3	LEFT SIDE



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Railroad Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from the point at which Railroad Hollow flows into Skidmore reservoir. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Skidmore Fork (lower)**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/04/03
Downstream Starting Point:	Forest Service Boundary just downstream of USFS Road 1197
Total Distance Surveyed (km):	1.9

	Pools	**Riffles**
Percent of Total Stream Area:	40	60
Total Area (m^2):	5321±1100	8015±527
Correction Factor Applied:	1.08	1.30
Number of Paired Samples:	4	3
Total Count:	43	32
Number per km:	23	17
Mean Area (m^2):	124	250
Mean Maximum Depth (cm):	53	25
Mean Average Depth (cm):	32	14
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:	2	--
Percent Surveyed as Runs:	--	3
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	9	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	20
< 5 m long, > 55 cm diameter:	4
> 5 m long, 10 cm – 55 cm diameter:	49
> 5 m long, > 55 cm diameter:	10
Total:	84

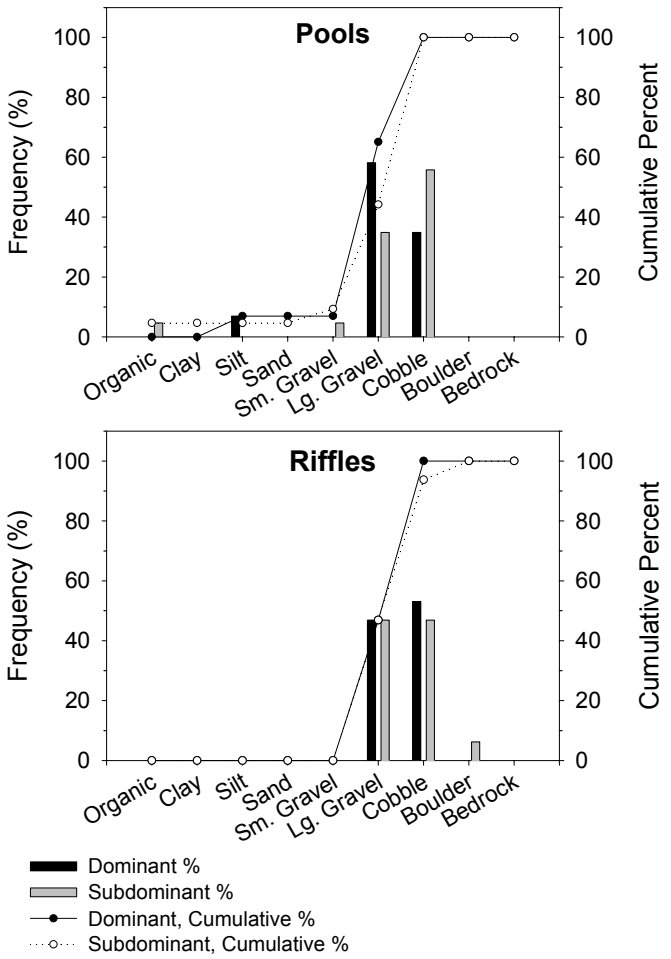
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	13	1
Maximum	14	2
75th Percentile	14	1
25th Percentile	12	1
Minimum	11	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

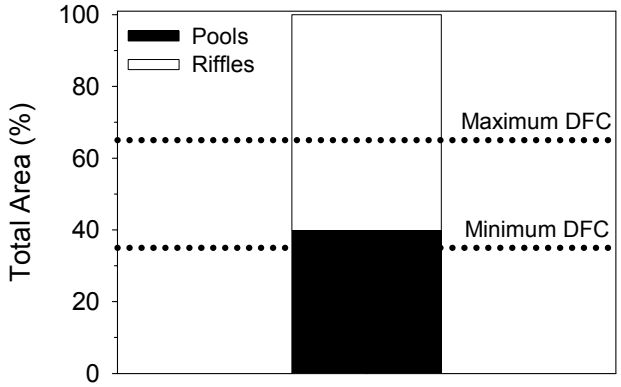
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	87
C:	0
D:	0
E:	0
F:	13
G:	0

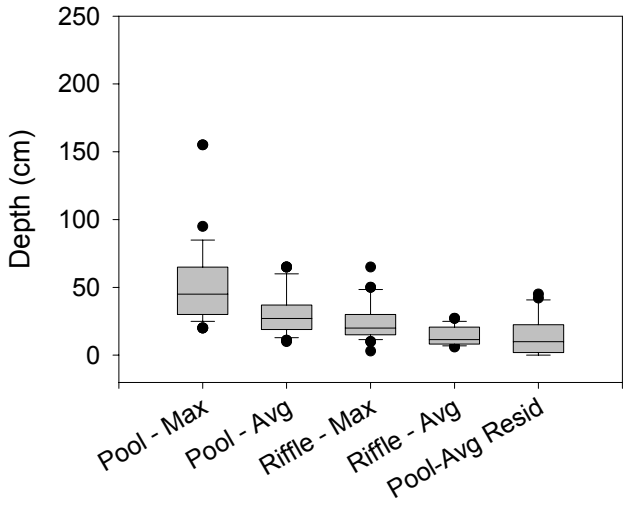
Other Stream Attributes	
Mean Bankfull Channel Width (m):	11
Mean Channel Gradient (%):	4
Median Water Temperature (C):	10



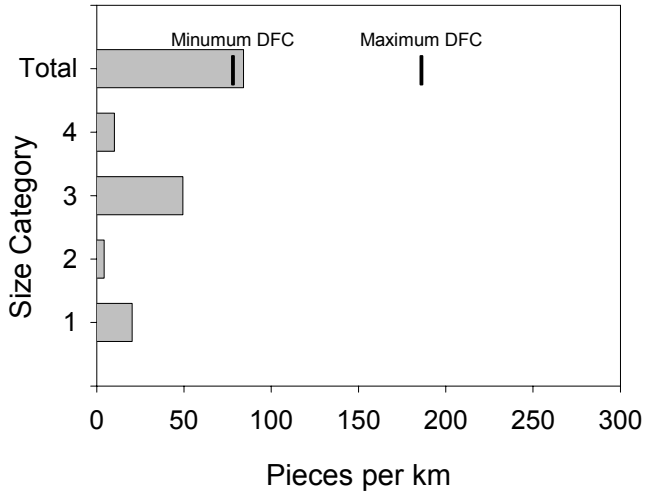
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Skidmore Fork (lower), summer 2003.



Estimated area of Skidmore Fork (lower) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Skidmore Fork (lower), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

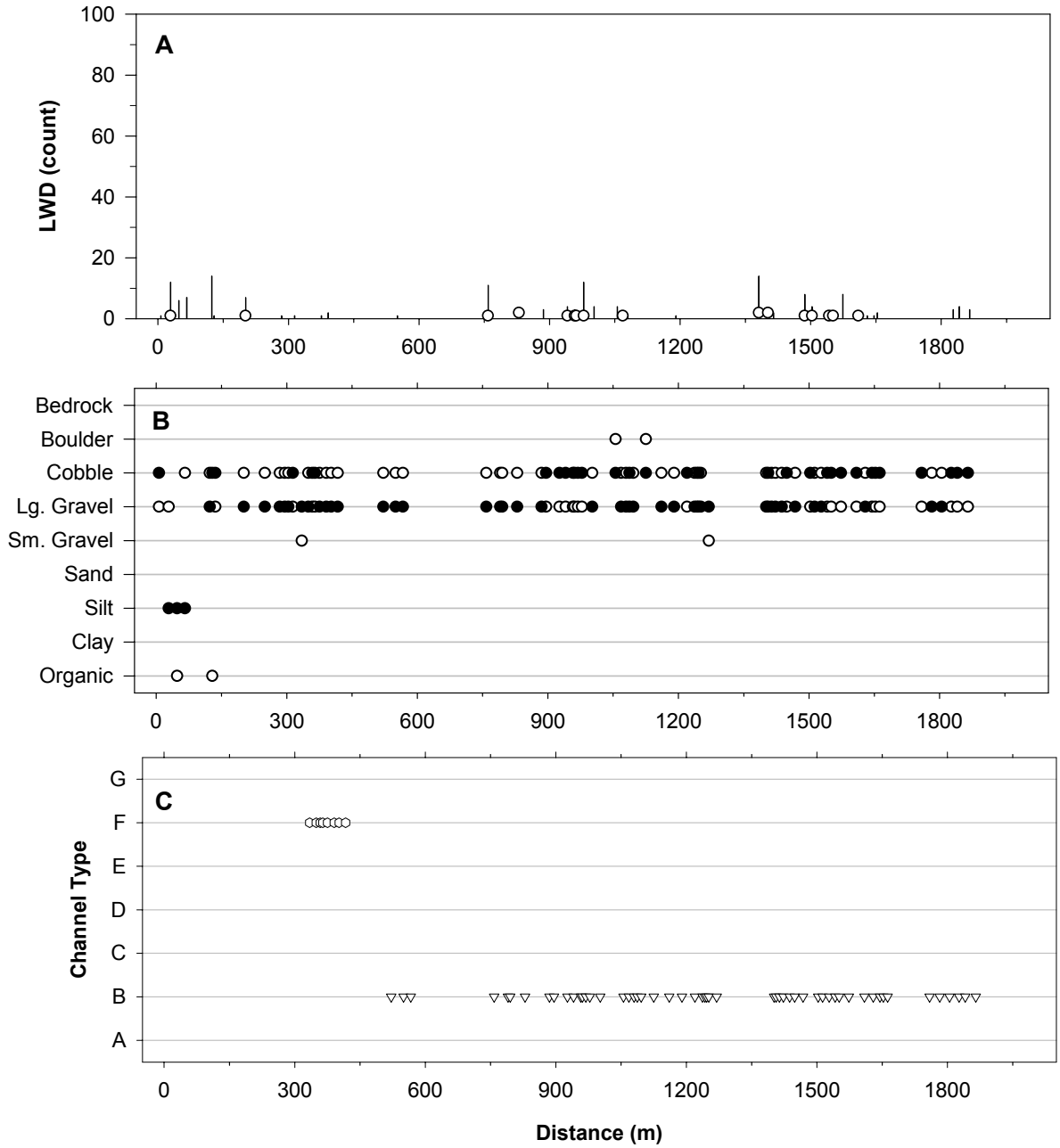


LWD per kilometer in Skidmore Fork (lower), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Skidmore Fork (lower), during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	322	Not available	LOW WATER BRIDGE WITH 11 CULVERTS, 80 CM, ROAD 227
Side channel	550		IN ON RIGHT, WIDTH 2
Tributary	973		IN ON LEFT, DRY
Tributary	1035		IN ON LEFT,WIDTH =2.5; UNDERGROUND 10M UP, MIGHT BE TIMBER HOLLOW
Tributary	1134		IN ON LEFT, DRY TRIB FEEDING INTO UNDERGROUND STREAM
Underground	1146		
Underground	1183		
Tributary	1215		IN ON RIGHT,WIDTH=1
Ford	1254.2		SKIDMORE FORK RD, JUST DOWNSTREAM OF FOREST SERVICE BOUNDARY
Underground	1380.5		BIG WOOD PILE PILED UP AT END OF DRY RUN
Underground	1486		
Tributary	1786		IN ON LEFT, DUNKLE HOLLOW, BRIAN'S STRING FROM THIS MORNING SURVEY, SIZE OF DUNKLE IS ROUGHLY SAME AS SKIDMORE
Tributary	1847		IN ON LEFT, DRY, ENDS SURVEY, HIT SERVICE BOUNDARY, 1500 HRS, DOWNSTREAM OF HOUSE WITH RED ROOF



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Skidmore Fork (lower), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service boundary just downstream of USFS Road 1197. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Skidmore Fork (upper)**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/04/03
Downstream Starting Point:	FS boundary just downstream of end of Skidmore Fork road (1197)
Total Distance Surveyed (km):	5.3

	Pools	**Riffles**
Percent of Total Stream Area:	19	81
Total Area (m^2):	3555±332	15450±671
Correction Factor Applied:	1.09	1.06
Number of Paired Samples:	12	11
Total Count:	127	121
Number per km:	24	23
Mean Area (m^2):	28	128
Mean Maximum Depth (cm):	49	30
Mean Average Depth (cm):	34	18
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	5
Percent Surveyed as Cascades:	--	10
Percent with >35% Fines:	2	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	85
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	86
> 5 m long, > 55 cm diameter:	5
Total:	177

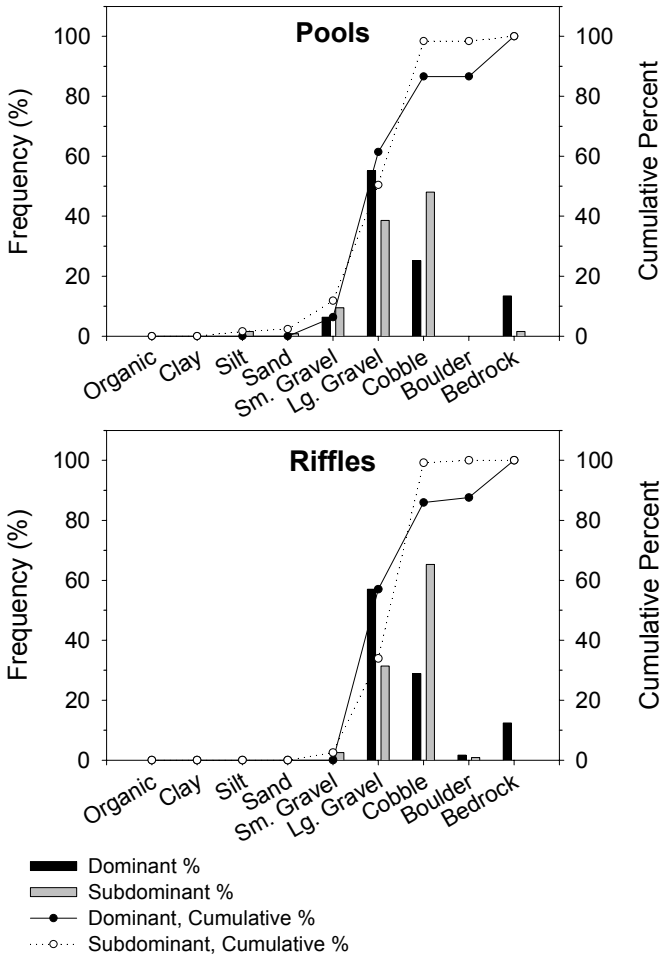
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	3
Maximum	17	9
75th Percentile	13	4
25th Percentile	9	1
Minimum	8	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

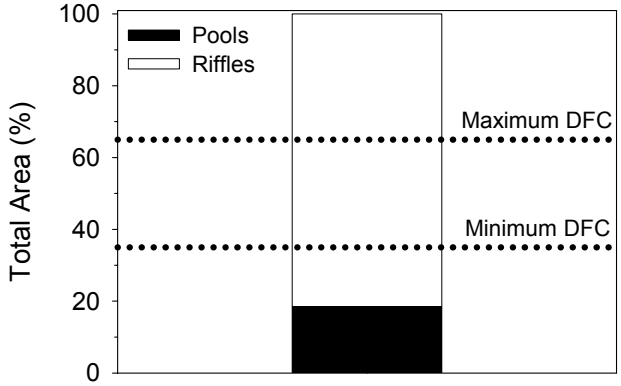
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	17
B:	83
C:	0
D:	0
E:	0
F:	0
G:	0

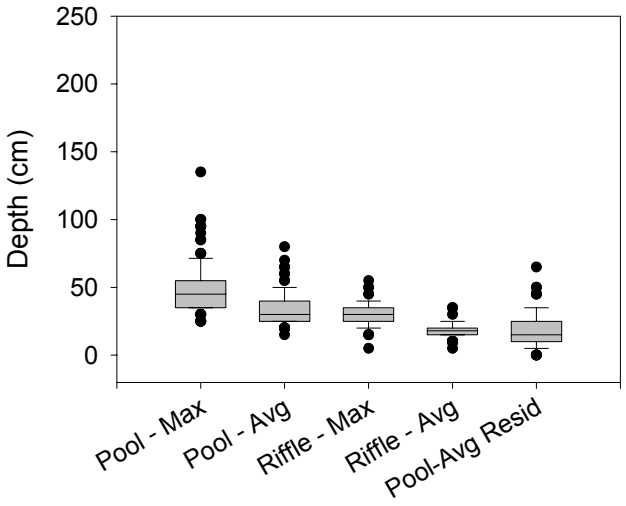
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	4
Median Water Temperature (C):	10.5



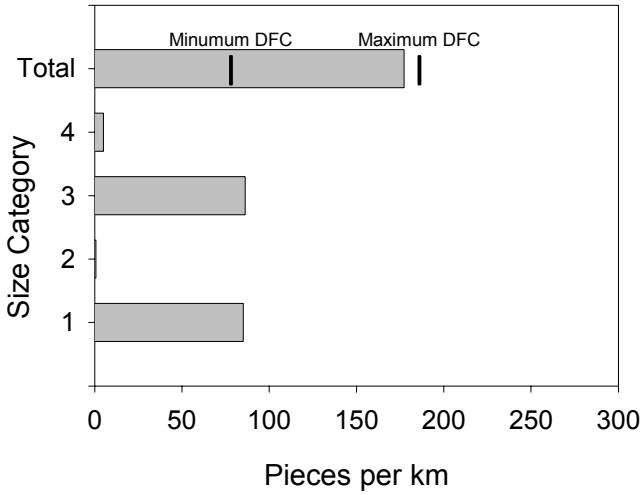
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Skidmore Fork (upper), summer 2003.



Estimated area of Skidmore Fork (upper) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Skidmore Fork (upper), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



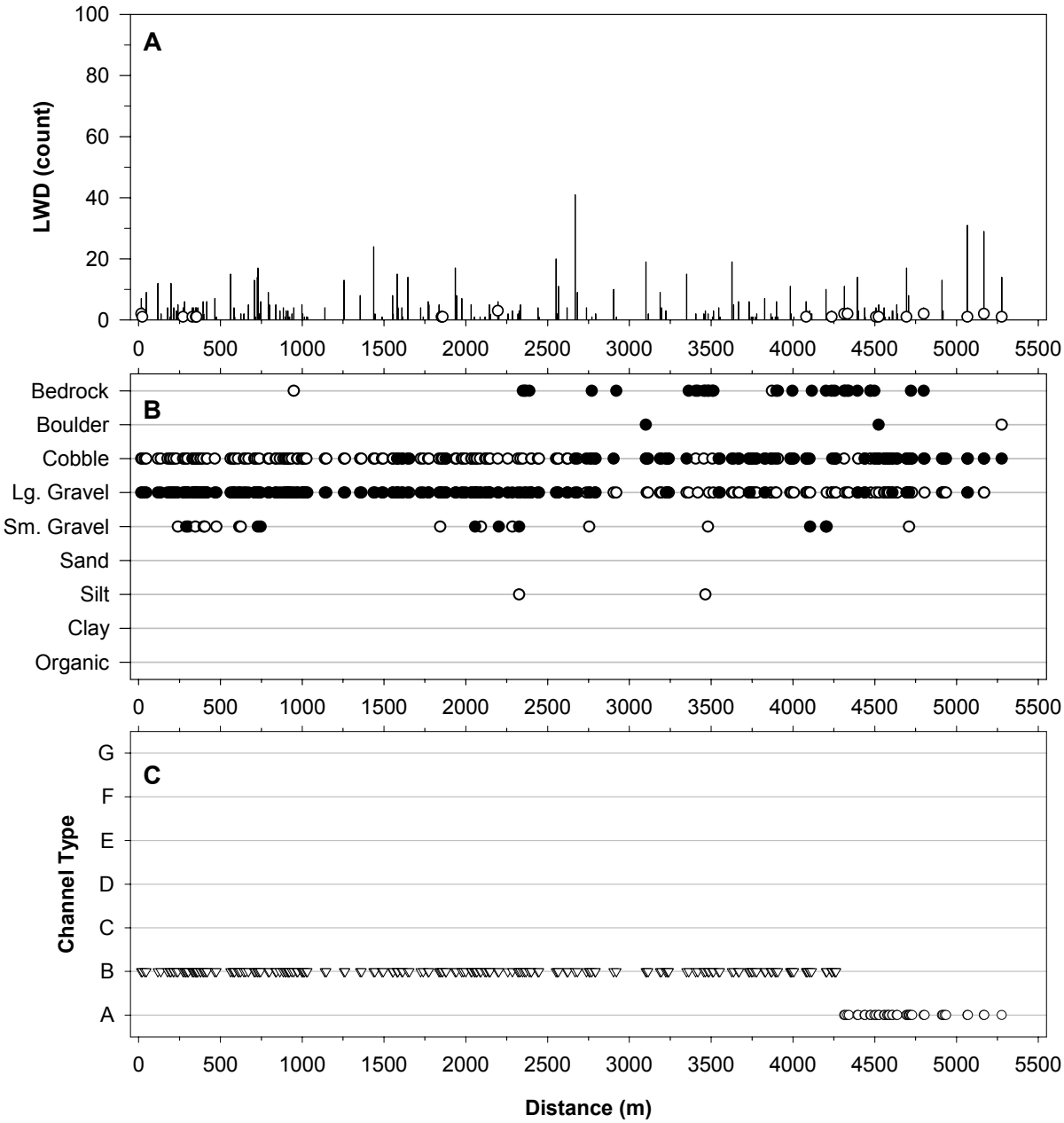
LWD per kilometer in Skidmore Fork (upper), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Skidmore Fork (upper) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	82.9	0.5	IN ON LEFT
Side channel	428	1.5	IN ON LEFT
Side channel	450	1.5	OUT ON LEFT;SAW BROOK TROUT IN SCH POOL
Seep	474	0.5	ON RIGHT;CLEAR;GOOD FLOW
Seep	511.4	0.5	ON RIGHT;CLEAR;GOOD FLOW
Side channel	617.9	1	IN LEFT
Side channel	653.8	1	OUT LEFT
Seep	750	0.3	ON RIGHT;CLEAR;GREEN ALGAE GRROOWING IN IT
Tributary	904.4	1	ON LEFT;VERY STEEP
Tributary	946.2	1	IN RIGHT
Seep	971.8	1	IN LEFT;CLEAR
Side channel	987.2	2	IN RIGHT
Tributary	1034.4	1.5	IN LEFT ;LOTS OF SAND;WALKED UP IT-FULL OF BRROK TROUT AND BROOK TROUT YOUNG;TEMPERATURE 10C;TRIB LESS THAN 400M BEFORE UNDERGROUND;VERY HIGH YOY DENSITY
Side channel	1054	2	OUT RIGHT
Ford	1069.2		GRAVEL ROAD IN GOOD CONDITION; COULD BE TRAIL CROSSING ON QUAD
Tributary	1156.9		IN RIGHT DRY;STEEP
Tributary	1532.9	1	IN LEFT;NOT STEEP
Tributary	1636.9	0.5	IN RIGHT;VERY STEEP;MOSTLY BEDROCK
Ford	1833.3		OLD GRAVEL ROAD STILL IN GOOD CONDITION-RAISED ROADBED ON RIGHT - POSSIBLE RAISED BED VERY OLD ON LEFT ALSO
Side channel	1922.5		IN LEFT DRY
Side channel	1944.5	1	OUT LEFT
Side channel	1989.3	1	IN RIGHT
Tributary	2003.1		IN LEFT DRY
Side channel	2005.1	1.5	OUT RIGHT
Tributary	2064.8		IN RIGHT DRY
Tributary	2154.8	2	IN LEFT-UNDERGROUND WITHIN 30M
Tributary	2391.6	2	IN LEFT;REALLY FLOWING WELL;MAINSTEM SHARP RIGHT HERE;ONLY PERINNEAL TRIB ON QUAD MAP
Ford	2441		GRAVEL ROADBED-SAMEONE THAT RUNS ALL THE WAY ALONG STREAM;MARKED AS TRAIL ON QUAD
Side channel	2457.2	1	IN RIGHT;NO OUT FOR SCH-UNDERGROUND
Side channel	2500	1	IN LEFT
Side channel	2534	1	OUT LEFT
Side channel	2644	0.5	IN RIGHT
Side channel	2659.5	0.5	OUT RIGHT
Side channel	2711.1	0.5	IN RIGHT

Side channel	2738.6	0.5	OUT RIGHT
Tributary	2769.9	1	IN RIGHT;VERY STEEP;'A' CHANNEL;GOOD FLOW
Side channel	2872.4	1	IN RIGHT
Side channel	2903.6		OUT RIGHT
Ford	2993		GRAVEL ROADBED - SAME ROAD AS BEFORE- THIS ROAD IS BEING USED BY TRUCKS DESPITE BEING CLOSED
Side channel	3170.3	1.5	IN RIGHT
Seep	3184.3		IN LEFT;CLEAR WATER;GOOD FLOW
Side channel	3187	1.5	OUT RIGHT
Side channel	3307	0.5	IN LEFT
Side channel	3339	0.5	IN LEFT;A BRANCH OF OTHER SCH
Side channel	3349.4	1	OUT LEFT
Side channel	3587.5	0.5	IN RIGHT
Tributary	3649	0.5	IN RIGHT;VERY STEEP
Tributary	3662.9	0.3	IN RIGHT;VERY STEEP
Tributary	3700		IN LEFT DRY
Side channel	3921.6	1	IN LEFT
Tributary	3921.6	1	IN RIGHT;VERYSTEEP;GOOD FLOW
Side channel	3948.6	1.5	IN LEFT
Tributary	3948.6	1	IN LEFT;GOOD FLOW;STEEP
Braid	4006.1		MULTIPLE CHANNELS HERE
Braid	4052		
Tributary	4139.3	0.5	VERY STEEP;GOOD FLOW;IN RIGHT
Side channel	4206.5	0.5	IN RIGHT
Tributary	4214.9	1	IN LEFT GOOD FLOW;IN WIDE STEEP VALLEY-MAY BE SPLIT IN STREAM ON QUAD WHERE IT GOES INTERMITTENT
Fall	4341.5		OVER BEDROCK-1.5 M HIGH
Braid	4387		START
Tributary	4503	0.5	IN LEFT; STEEP AND FLOWING WELL
Braid	4507		END
Side channel	4618.8		IN LEFT
Side channel	4637.4	1.5	IN LEFT
Side channel	4686.7	1.5	OUT LEFT
Braid	4712.8		END
Side channel	4805	0.3	IN RIGHT
Tributary	4935	0.5	IN RIGHT; VALLEY SPLITS HERE IN 'Y' SHAPE;BOTH BRANCHES STEEP;WE GO LEFT
Braid	5170		START
Braid	5220		SAW PICKEREL OR LEOPARD FROG
Braid			START



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Skidmore Fork (upper), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service boundary just downstream of end of Skidmore Fork Road 1197. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Timber Hollow**
District:	Dry River
USGS Quadrangle:	Brandywine
Survey Date:	06/04/03
Downstream Starting Point:	Confluence of Skidmore Fork
Total Distance Surveyed (km):	2.5

	Pools	**Riffles**
Percent of Total Stream Area:	9	91
Total Area (m^2):	391±60	4142±1115
Correction Factor Applied:	0.79	0.91
Number of Paired Samples:	6	5
Total Count:	51	53
Number per km:	20	21
Mean Area (m^2):	8	78
Mean Maximum Depth (cm):	26	19
Mean Average Depth (cm):	17	10
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:	43	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	2
Percent with >35% Fines:	20	2

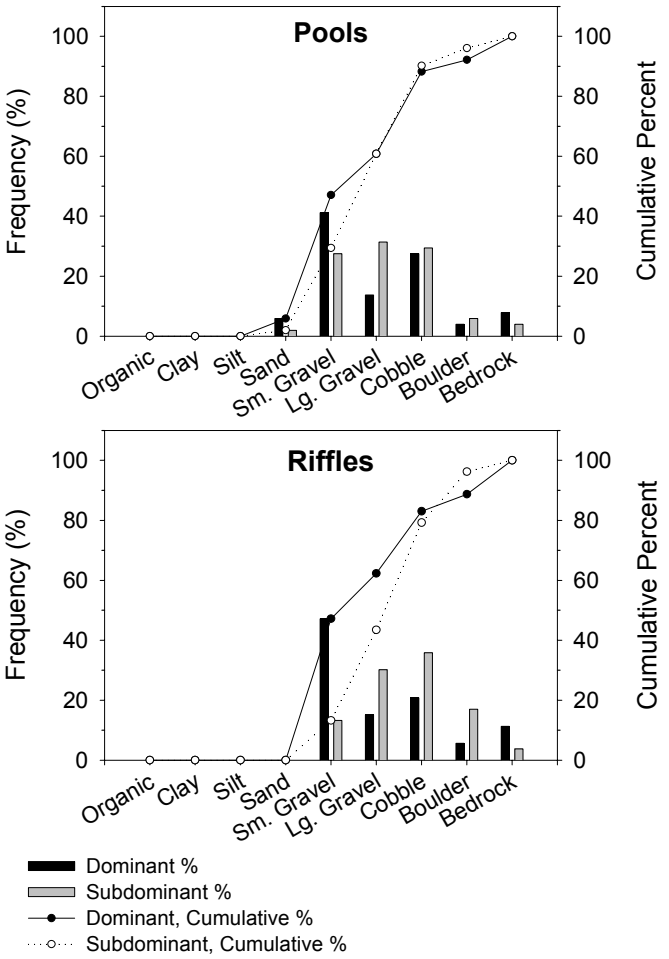
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	59
< 5 m long, > 55 cm diameter:	7
> 5 m long, 10 cm – 55 cm diameter:	50
> 5 m long, > 55 cm diameter:	8
Total:	124

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	7	1
Maximum	12	4
75^{th} Percentile	7	1
25^{th} Percentile	5	0
Minimum	4	0

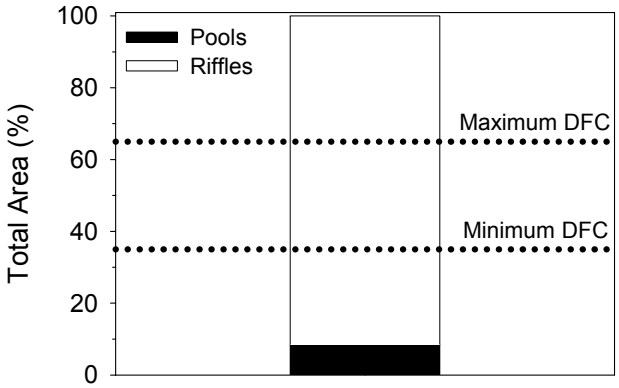
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	60
B:	17
C:	0
D:	0
E:	0
F:	23
G:	0

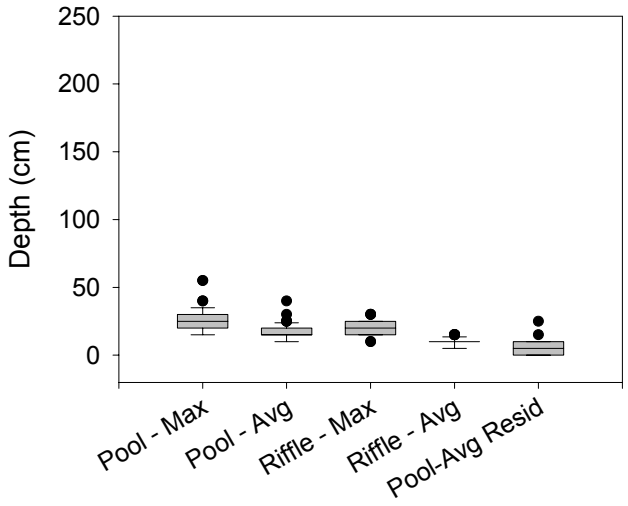
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	8
Median Water Temperature (C):	13



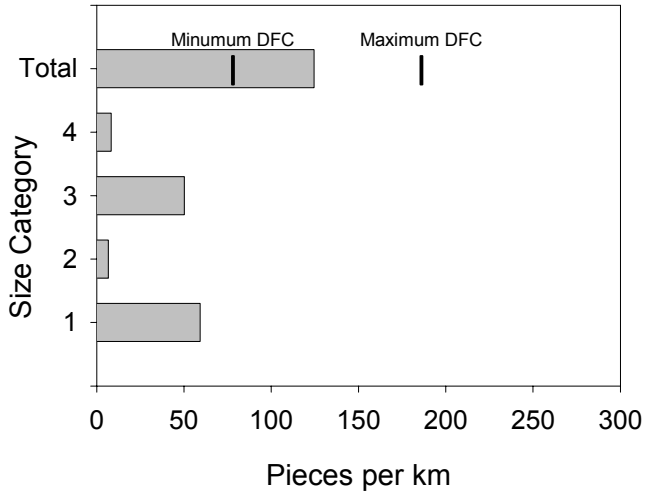
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Timber Hollow, summer 2003.



Estimated area of Timber Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Timber Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

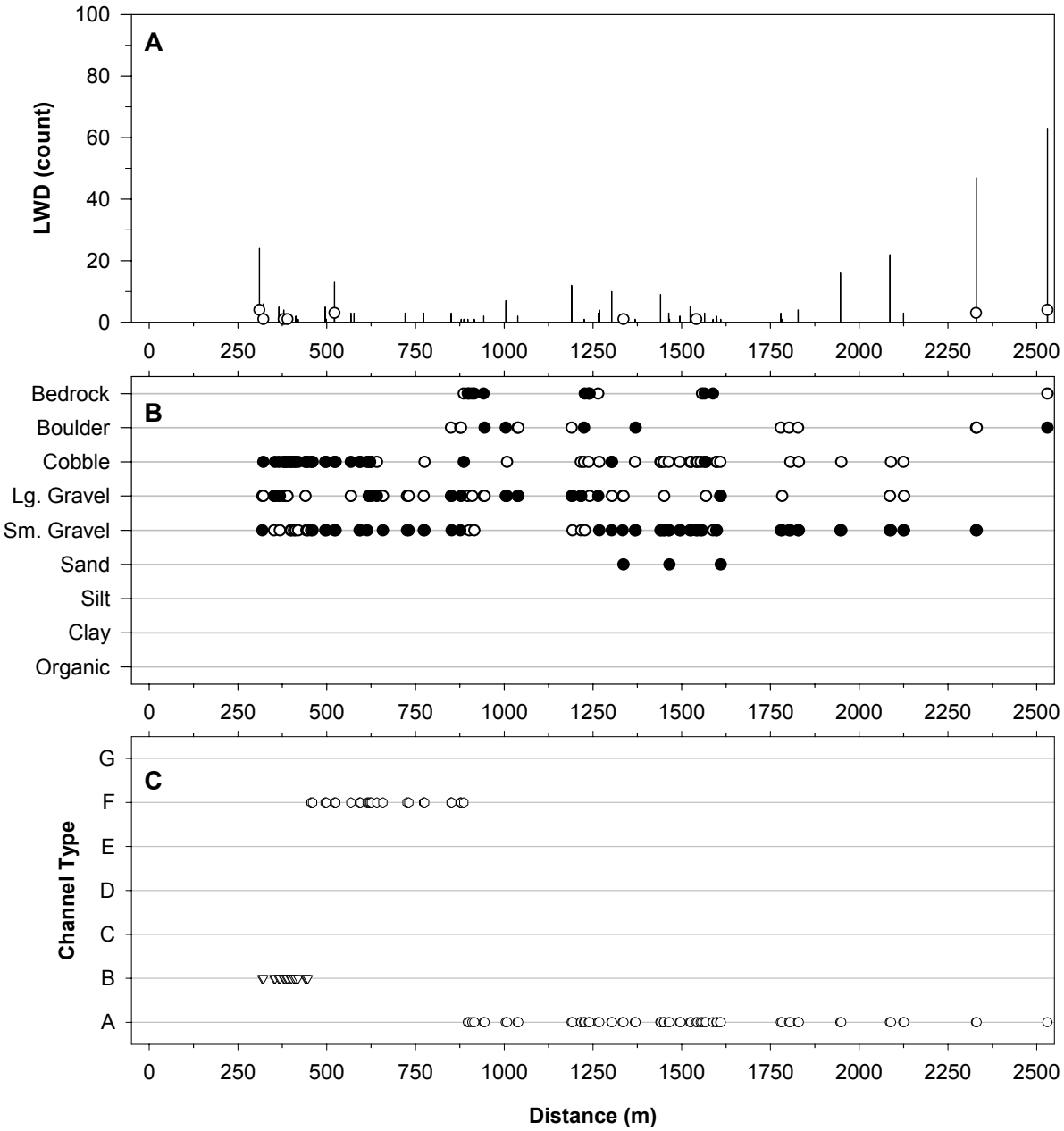


LWD per kilometer in Timber Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

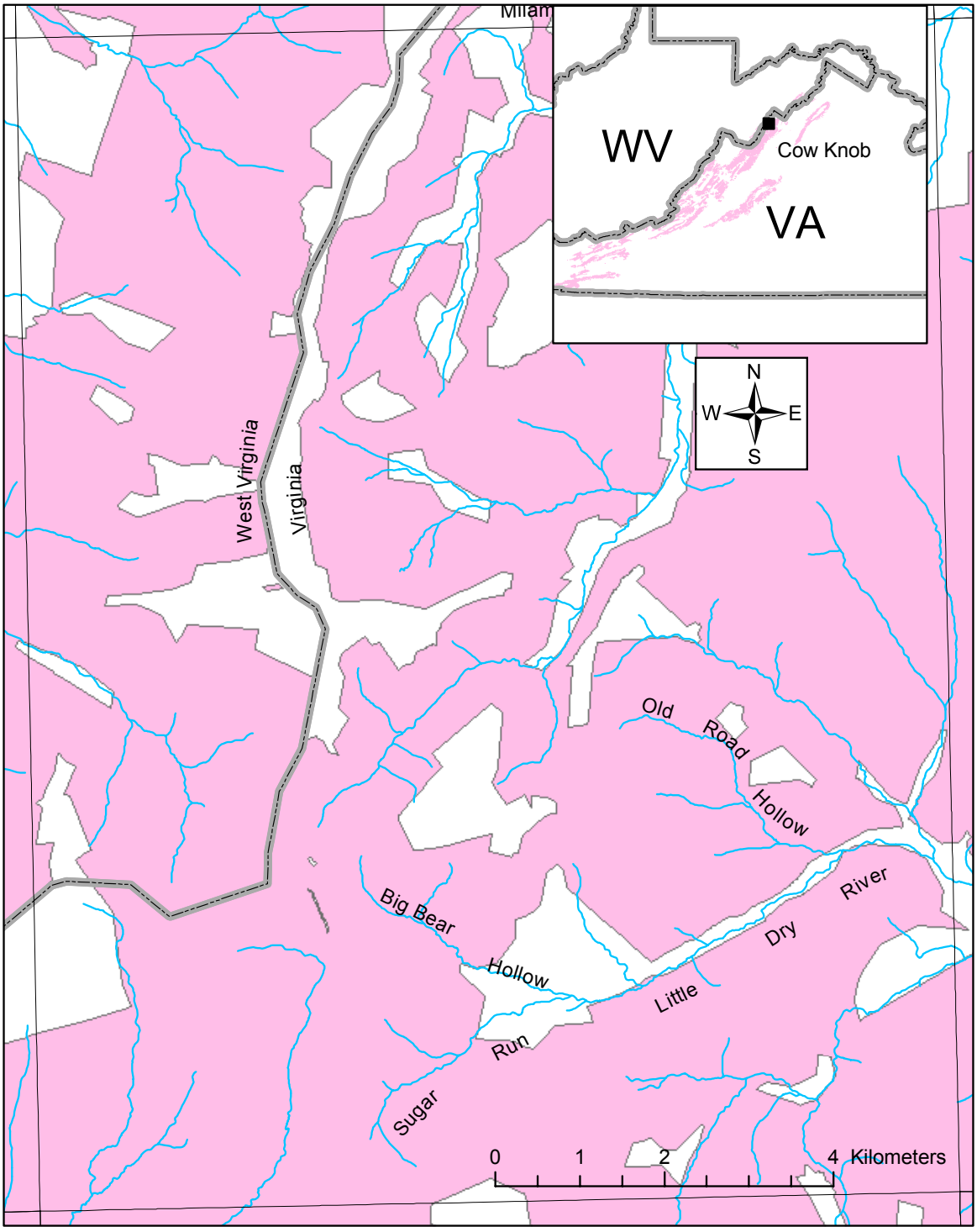
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Timber Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	141.1		CONCRETE SLAB PROTRUING OUT OF CULVERT
Seep	498.7		TRICKLE
Seep	544.1		MORE LIKE A SPRING, BUT NOT AS OBVIOUS,LEFT SIDE,BUBBLING UP
Tributary	592.4		DRY TRIB,WALKED UP STREAM CHANNEL FOR 50 METERS AND FOUND NO SIGN OF WATER
Ford	780.3		FOOT TRAIL CROSSING, NOT WIDE ENOUGH FOR VEHICLES
Ford	843.2		TRAIL COMES BACK ACROSS
Ford	969.5		TRAIL CROSSING
Tributary	1052.2	1	TOOK PICTURE OF TRIB, EXTREME A CHANNEL
Ford	1167.8		TRAIL CROSSING
Seep	1465.5		SPRING RIGHT
Ford	1492.7		TRAIL CROSSING, TRAIL IS NOW ON RIGHT SIDEW OF STREAM
Tributary	1689.9	4	WENT LEFT BECAUSE THE LEFT SIDE IS LABLED ON THE MAP, THE TRIB TO THE RIGHT HAS MORE FLOW
Ford	1725		TRAIL STARTS BACK ON THE RIGHT
Tributary	2020.6	0.3	AWFULLY TINY, REAL SMALL TRIB ON THE RIGHT2
Tributary	2354		UNDERGROUND, PROBABLY HAS AN INFLUENCE ON WATER FLOW OF TIMBER HOLLOW



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Timber Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence of Skidmore Fork. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).



Streams inventoried on the Cow Knob Quadrangle using BVET habitat surveys during summer 2003.

Stream:	**Big Bear Hollow**
District:	Dry River
USGS Quadrangle:	Cow Knob
Survey Date:	06/11/03
Downstream Starting Point:	Beginning of Forest Boundry off of USFS road 87
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	32	68
Total Area (m^2):	2664±231	5682±2733
Correction Factor Applied:	0.77	1.25
Number of Paired Samples:	6	7
Total Count:	65	73
Number per km:	28	32
Mean Area (m^2):	41	78
Mean Maximum Depth (cm):	52	31
Mean Average Depth (cm):	34	20
Mean Residual Depth (cm):	18	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	3
Percent Surveyed as Cascades:	--	32
Percent with >35% Fines:	0	0

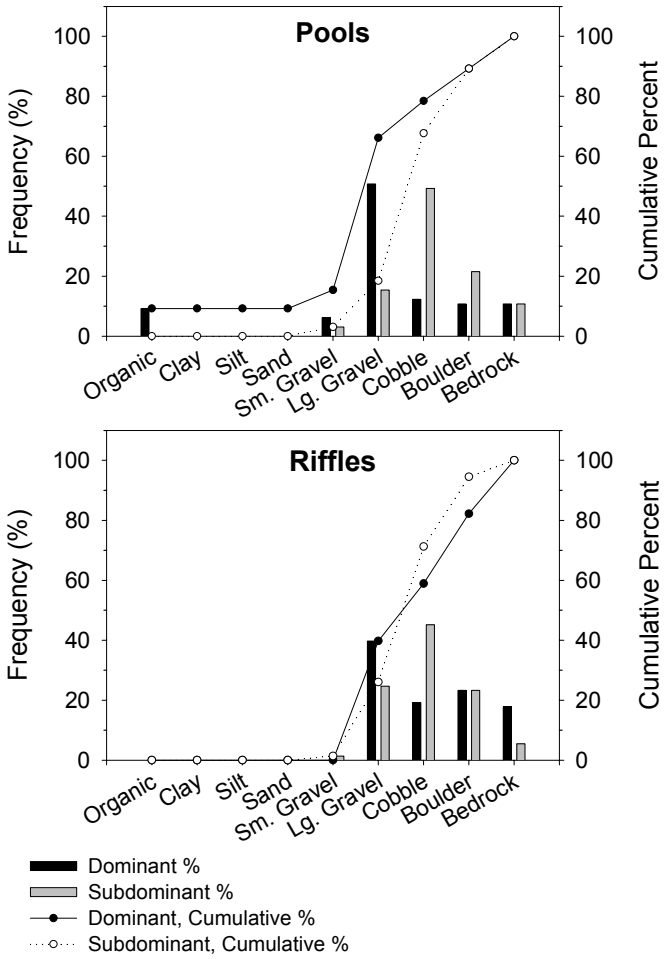
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	68
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	64
> 5 m long, > 55 cm diameter:	5
Total:	139

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	13	2
Maximum	18	8
75th Percentile	15	3
25th Percentile	11	1
Minimum	7	0

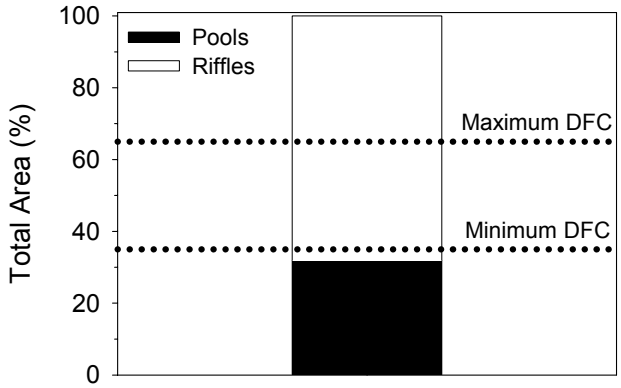
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	38
B:	62
C:	0
D:	0
E:	0
F:	0
G:	0

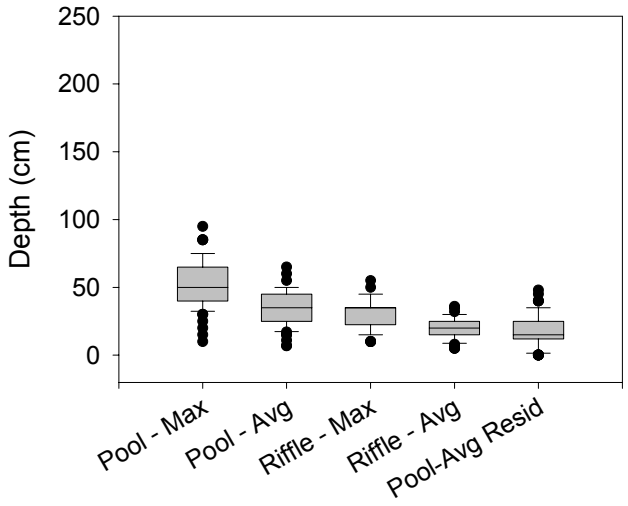
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	10
Median Water Temperature (C):	13



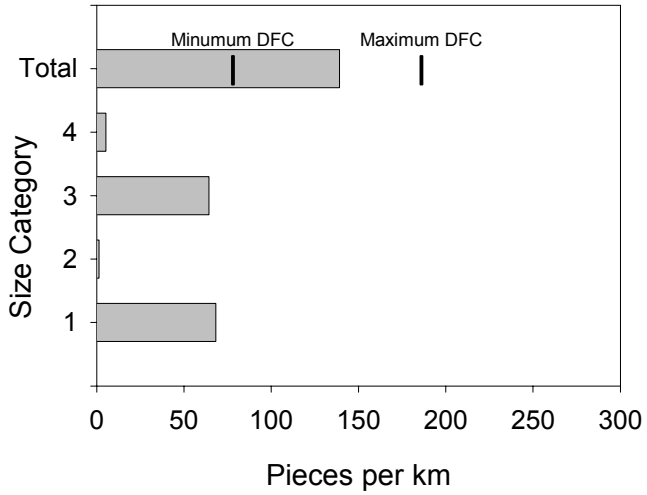
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Bear Hollow, summer 2003.



Estimated area of Big Bear Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Big Bear Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

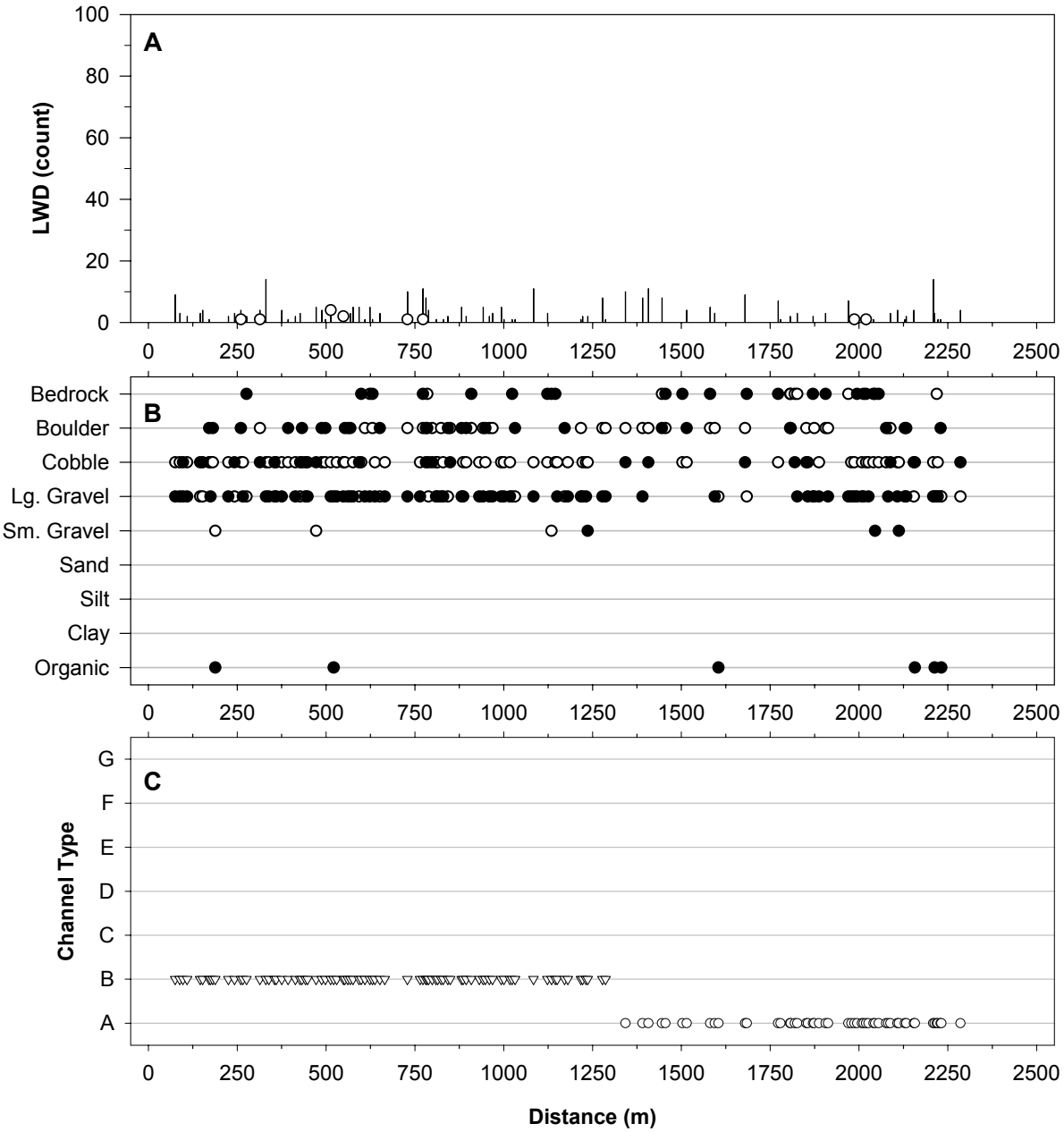


LWD per kilometer in Big Bear Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Bear Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	931.2		IN ON RIGHT, LITTLE BEAR STREAM CREATING THE CONFLUENCE
Tributary	1277.9		IN ON RIGHT, DRY TRIB
Tributary	1538.9	0.2	IN ON LEFT, SMALL TRICKLE COMING DOWN
Tributary	1779.6	0.5	IN ON LEFT, ONE OF THE LARGE TRIBS LISTED ON QUAD
Fall	1826.2		HEIGHT=1 METER
Seep	2150.4		IN ON LEFT, SMALL AMOUNT FLOWING OUT OF DIRT FACE
Tributary	2160.9	0.2	IN ON LEFT
Tributary	2189.4	0.5	IN ON LEFT
Seep	2235.5		FLOW STEADILY COMING OUT OVER ROCKS
Tributary	2285.5		IN ON LEFT, DRY, END OF SURVEY AT 1000,STREAM RAN DRY, ENDING WAS AT THE LAST TRIB ON LEFT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Bear Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from beginning of Forest Service boundary off of Forest Road 87. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little Dry River**
District:	Dry River
USGS Quadrangle:	Cow Knob
Survey Date:	06/09/03
Downstream Starting Point:	USFS boundary downstream from Forest road 240 off of state road 818
Total Distance Surveyed (km):	0.3

	Pools	**Riffles**
Percent of Total Stream Area:	--*	--*
Total Area (m^2):	--*±	965±
Correction Factor Applied:	--*	0.78
Number of Paired Samples:	0	1
Total Count:	2	3
Number per km:	7	10
Mean Area (m^2):	--*	322
Mean Maximum Depth (cm):	88	38
Mean Average Depth (cm):	68	23
Mean Residual Depth (cm):	35	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	0	0

*could not calculate, not enough paired samples

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	87
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	114
> 5 m long, > 55 cm diameter:	0
Total:	201

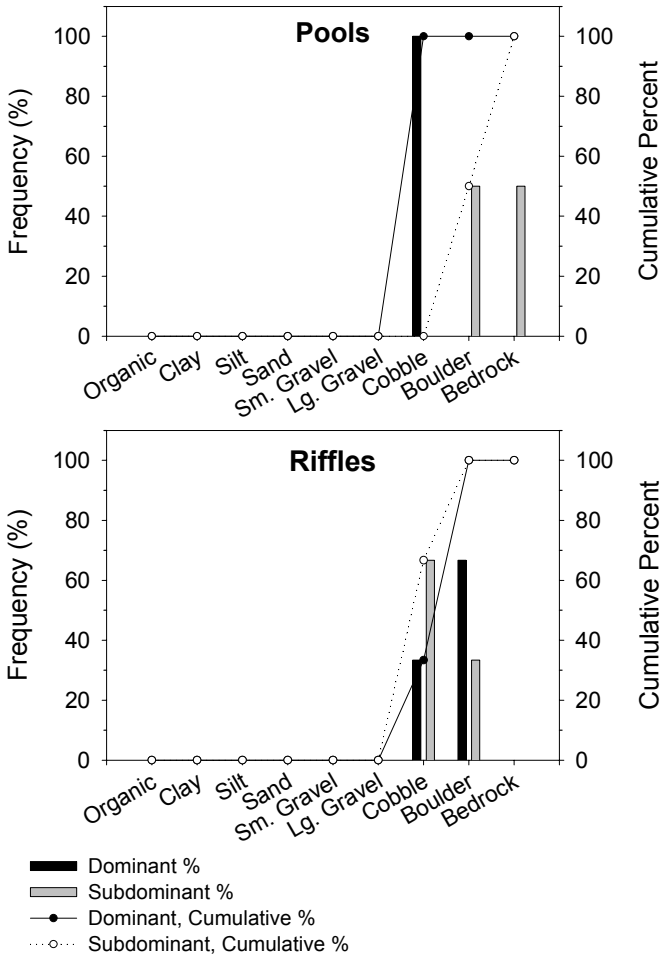
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	13	1
Maximum	13	1
75th Percentile	13	1
25th Percentile	13	0
Minimum	13	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

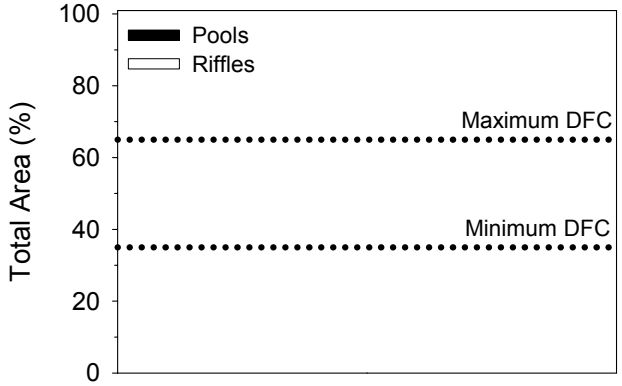
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	0
C:	0
D:	0
E:	0
F:	100
G:	0

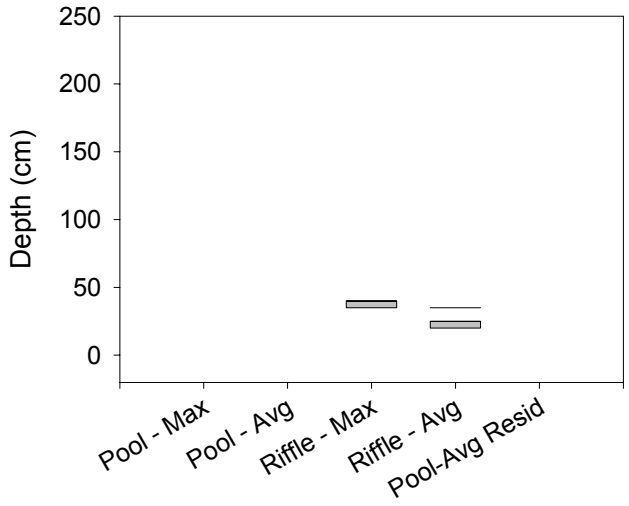
Other Stream Attributes	
Mean Bankfull Channel Width (m):	12
Mean Channel Gradient (%):	4
Median Water Temperature (C):	15.5



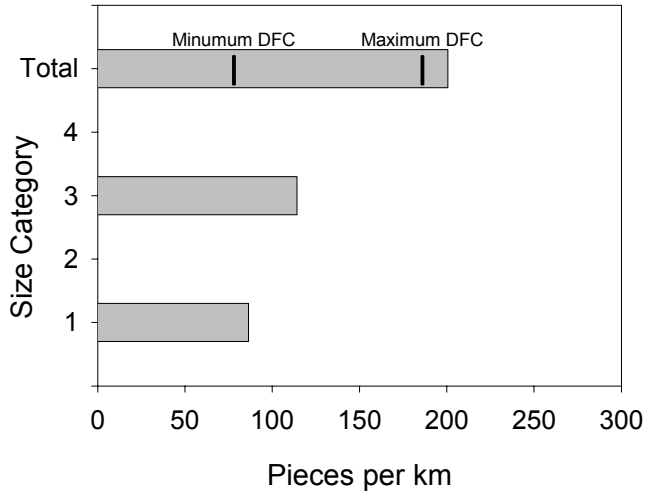
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little Dry River, summer 2003.



Estimated area of Little Dry River in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Little Dry River, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

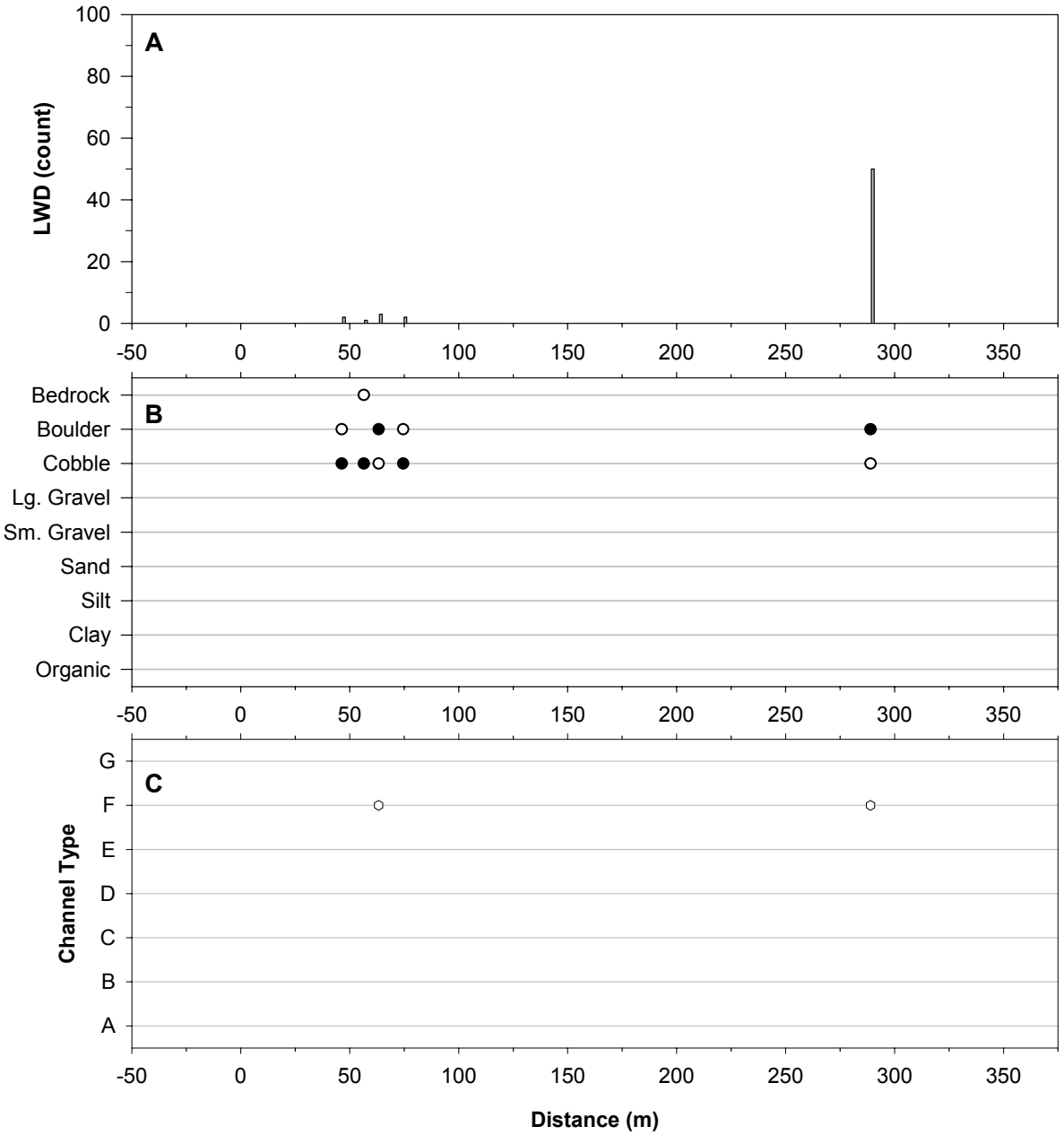


LWD per kilometer in Little Dry River, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little Dry River during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
FORD	208.5	-	FOREST ROAD 240 CROSSES STREAM, PAVED CONCRETE, 12M LONG AND 4.5M WIDE, USED OFTEN, FOREST BOUNDARY MARKINGS AND POSTED SIGNS EVERYWHERE MANY ARE CONFLICTING



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little Dry River, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service boundary downstream from Forest Road 240 off of State Road 818. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Old Road Hollow**
District:	Dry River
USGS Quadrangle:	Cow Knob
Survey Date:	06/09/03
Downstream Starting Point:	Culvert on Little Dry River Road, not start of stream due to not knowing whether downstream is private land
Total Distance Surveyed (km):	4.5

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	1312±88	9272±1257
Correction Factor Applied:	1.15	0.99
Number of Paired Samples:	6	8
Total Count:	62	77
Number per km:	14	17
Mean Area (m^2):	21	120
Mean Maximum Depth (cm):	36	29
Mean Average Depth (cm):	25	18
Mean Residual Depth (cm):	9	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	9
Percent Surveyed as Cascades:	--	3
Percent with >35% Fines:	2	1

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	38
< 5 m long, > 55 cm diameter:	2
> 5 m long, 10 cm – 55 cm diameter:	31
> 5 m long, > 55 cm diameter:	6
Total:	78

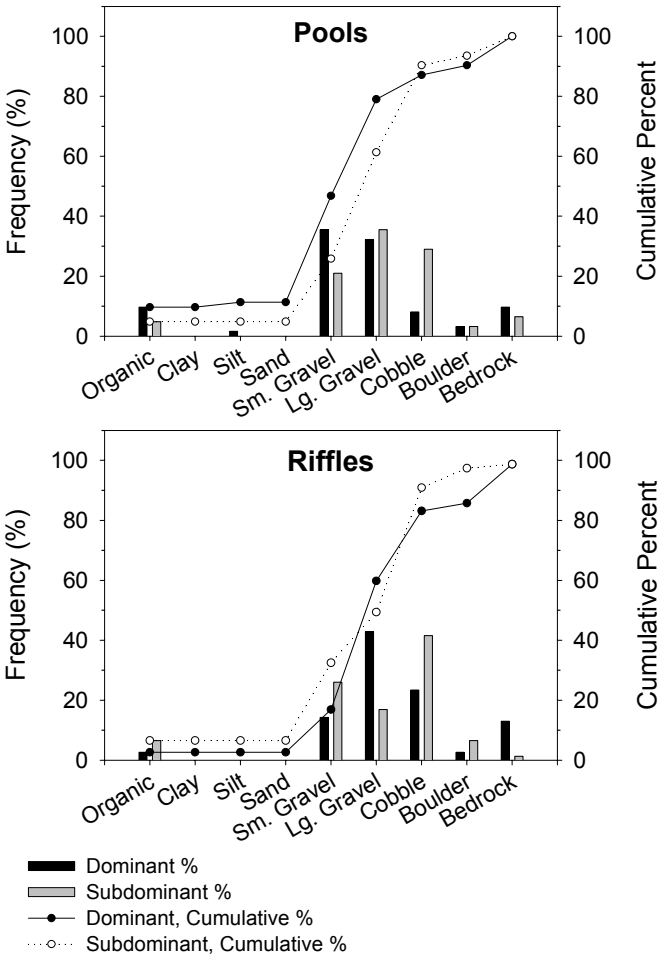
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	8	2
Maximum	13	7
75^{th} Percentile	9	2
25^{th} Percentile	7	1
Minimum	5	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

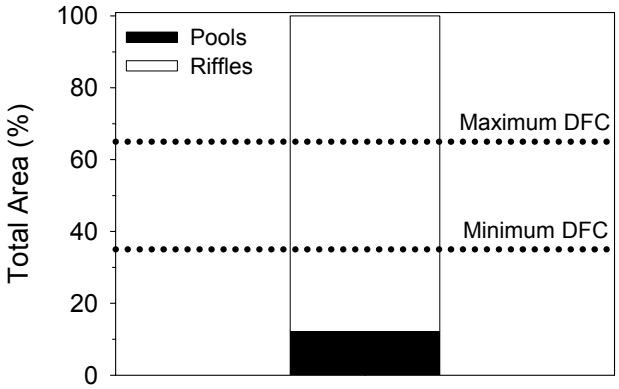
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	15
B:	85
C:	0
D:	0
E:	0
F:	0
G:	0

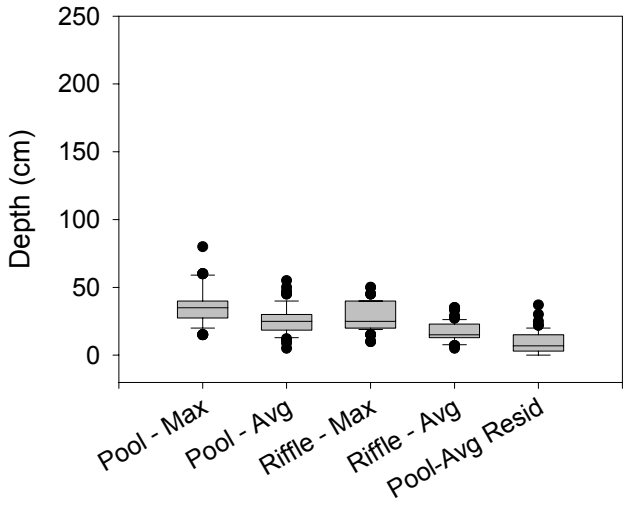
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	7
Median Water Temperature (C):	13



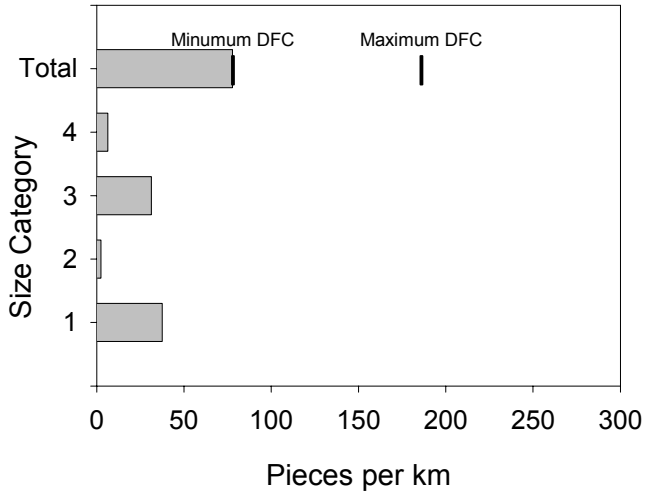
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Old Road Hollow, summer 2003.



Estimated area of Old Road Hollow in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Old Road Hollow, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



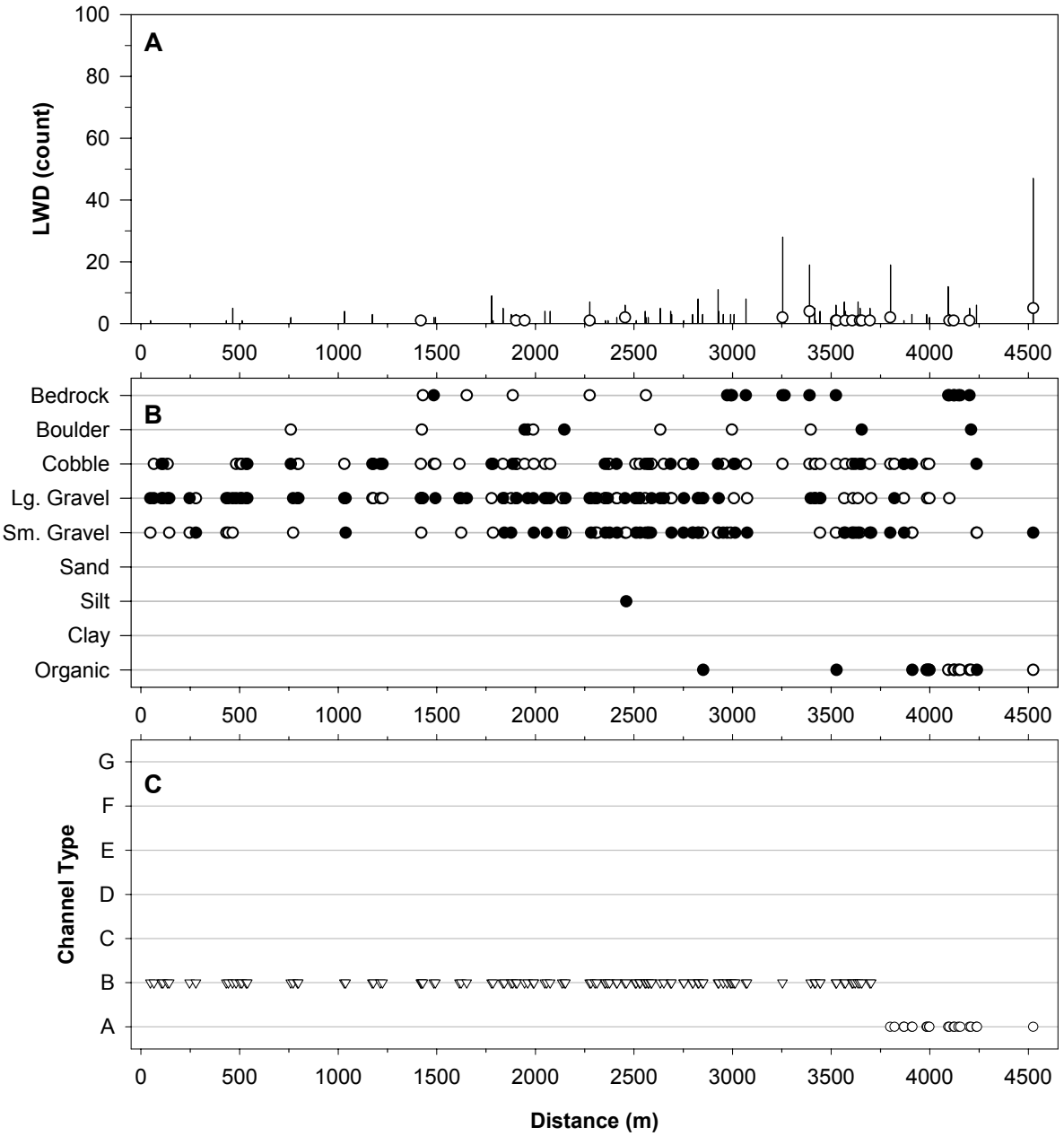
LWD per kilometer in Old Road Hollow, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Old Road Hollow during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	65.8		IN ON LEFT
Ford	187.7		DIRT ROAD, GOOD CONDITION, RUNS FOR 50 METERS ON LEFT, BEFORE ENDING
Tributary	189.7	3.5	IN ON LEFT, ROUGHLY THE SAME SIZE AS OLD ROAD HOLLOW
Side channel	246.8		OUT ON LEFT
Braid	330		LOW LEVEL AREA FLOODED WHICH PROBABLY CAUSED ITS BRAIDED STATE
Side channel	360	2	IN ON LEFT
Braid	384.3		
Braid	443		BRAIDED DUE TO DEBRIS PILES FROM HIGH RAIN
Ford	443		IN ON LEFT, LOOKS LIKE TRIB BUT FOLLOWED UP 35 METERS AND IT TURNED INTO A DIRT ROAD
Braid	465		3 SKELETONS WITH ROTTED SMELL REEKING THE NOSTRILS OF USFS WORKERS, GARBAGE BAG WITH ROTTING DEER SKINS
Ford	646.7		DIRT ROAD, OVER GROWN WITH PLANTS, LEADS TO 1117 50 M ON RIGHT
Tributary	778.2	1.5	
Tributary	839.1	0.75	IN ON RIGHT, CUTS UNDER 1117 THROUGH CULVERT
Seep	899.9		IN ON RIGHT,CROSSES 1117 BEFORE IT ENTERS OLD ROAD HOLLOW,EPHERMERAL
Culvert	1047.3		WIDTH =3, CROSSES UNDERROAD 1117,DIRT,GRAVEL ROAD, METAL TUBE, 1117 NOW ON LEFT
Tributary	1136.5	1.5	IN ON LEFT
Tributary	1246.9		IN ON RIGHT, DRY
Tributary	1446.6	0.35	IN ON RIGHT
Ford	1600.2		
Tributary	1676.5	0.5	STARTING STREAM AT 1015 AM AT FORD,SUNNY AND WARM
Ford	1743.9		DIRT ROAD, GOOD CONDITION, FIRE BOUNDARY ROAD
Side channel	1855.1	0.75	IN ON LEFT
Side channel	1885.4		OUT ON LEFT
Tributary	2209.7		IN ON RIGHT, DRY
Side channel	2329.8	0.75	IN ON LEFT,ROAD 1117 10 METERS FROM STREAM
Side channel	2430.9	0.5	IN ON LEFT
Seep	2435.7		FAST TRICKLE
Tributary	2448.2	0.3	IN ON RIGHT
Side channel	2461.3	0.5	OUT ON LEFT

Ford	2471.4		FIRE ROAD ,GOOD CONDITION, DIRT ROAD
Seep	2509.2		SMALL FLOW, FLOWS OFF OF FIRE ROAD INTO STREAM
Seep	2571.9		IN ON RIGHT, SMALL AMONT OF FLOW
Side channel	2876.8	0.5	IN ON LEFT
Side channel	2908.5	0.75	OUT ON LEFT
Side channel	2917.1	0.5	IN ON LEFT
Side channel	2929.2	0.4	OUT ON LEFT
Tributary	2957.5	1	IN ON LEFT,SMALL OUTFLOW,UNDERGGROUND 50 METERS UP
Side channel	3060.5	0.5	IN ON RIGHT,
Side channel	3098.8		OUT ON RIGHT
Tributary	3317.5	0.5	IN ON RIGHT
Tributary	3459.9		IN ON RIGHT,DRY BUT MOIST
Side channel	3504.6	1	IN ON RIGHT
Tributary	3542.4	0.5	IN ON RIGHT
Side channel	3705.4	0.5	IN ON LEFT
Side channel	3712.1		OUT ON LEFT
Tributary	3839.8	0.5	IN ON RIGHT, ROUGHLY THE SAME SIZE AS STREAM,
Seep	4001.4		IN ON RIGHT, 1 METER WIDE TRICKLE,GOS UNDERGROUND 15 M UP
Culvert	4432.2		DIAMETER .8 M,CUTS UNDER 1117A



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Old Road Hollow, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from culvert on Little Dry River Road. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Sugar Run**
District:	Dry River
USGS Quadrangle:	Cow Knob
Survey Date:	06/23/03
Downstream Starting Point:	Walked upstream from FS road 240 through a mile of private land and started at the boundary.
Total Distance Surveyed (km):	2.4

	Pools	**Riffles**
Percent of Total Stream Area:	17	83
Total Area (m^2):	1060±369	5285±753
Correction Factor Applied:	1.03	1.26
Number of Paired Samples:	5	5
Total Count:	56	53
Number per km:	23	22
Mean Area (m^2):	19	100
Mean Maximum Depth (cm):	53	34
Mean Average Depth (cm):	35	14
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:	23	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	4
Percent with >35% Fines:	38	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	100
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	113
> 5 m long, > 55 cm diameter:	5
Total:	218

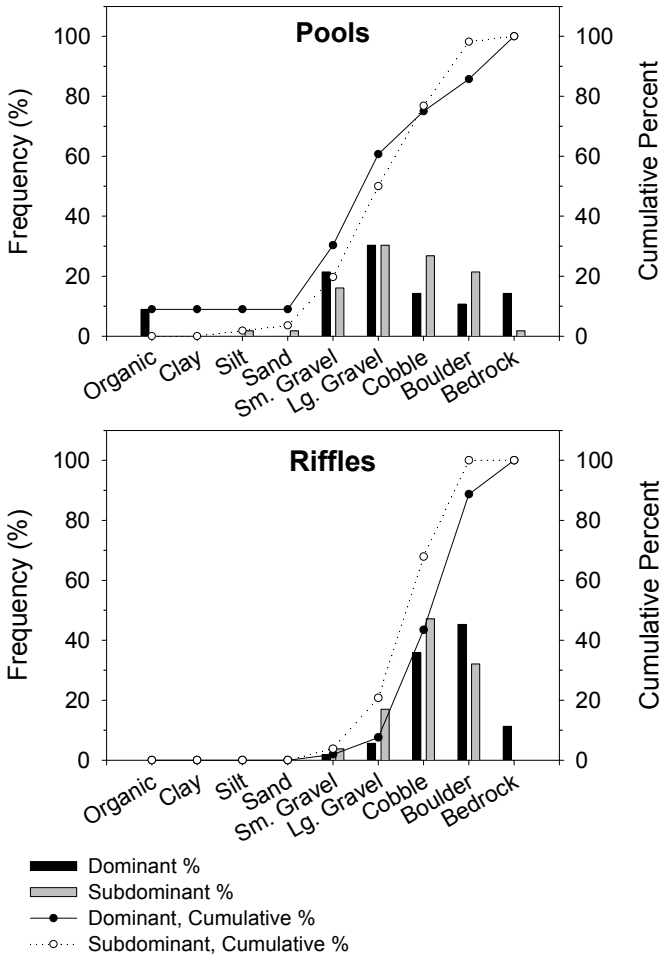
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	20	2
Maximum	65	8
75th Percentile	12	2
25th Percentile	6	0
Minimum	6	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

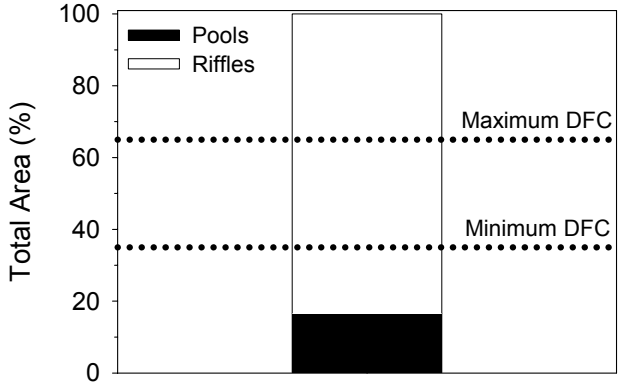
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	68
B:	2
C:	0
D:	0
E:	0
F:	30
G:	0

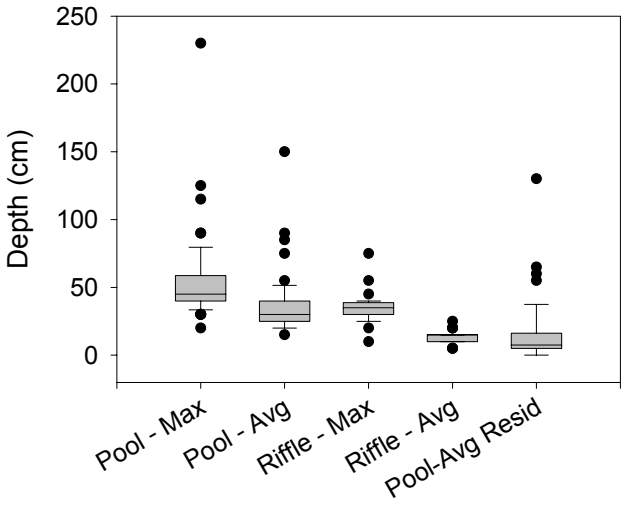
Other Stream Attributes	
Mean Bankfull Channel Width (m):	16
Mean Channel Gradient (%):	6
Median Water Temperature (C):	12



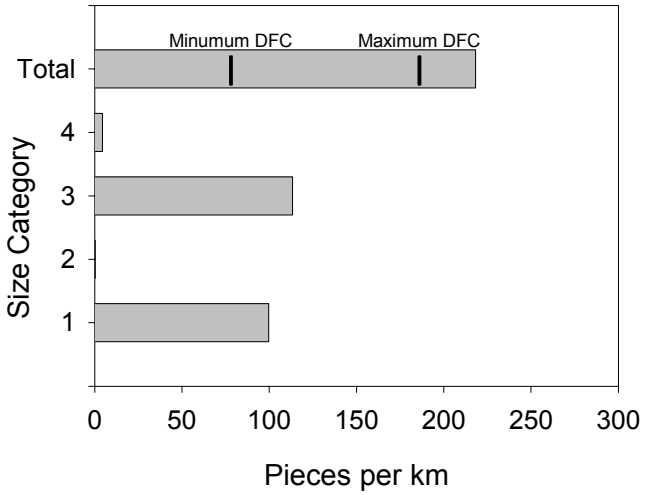
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Sugar Run, summer 2003.



Estimated area of Sugar Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Sugar Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

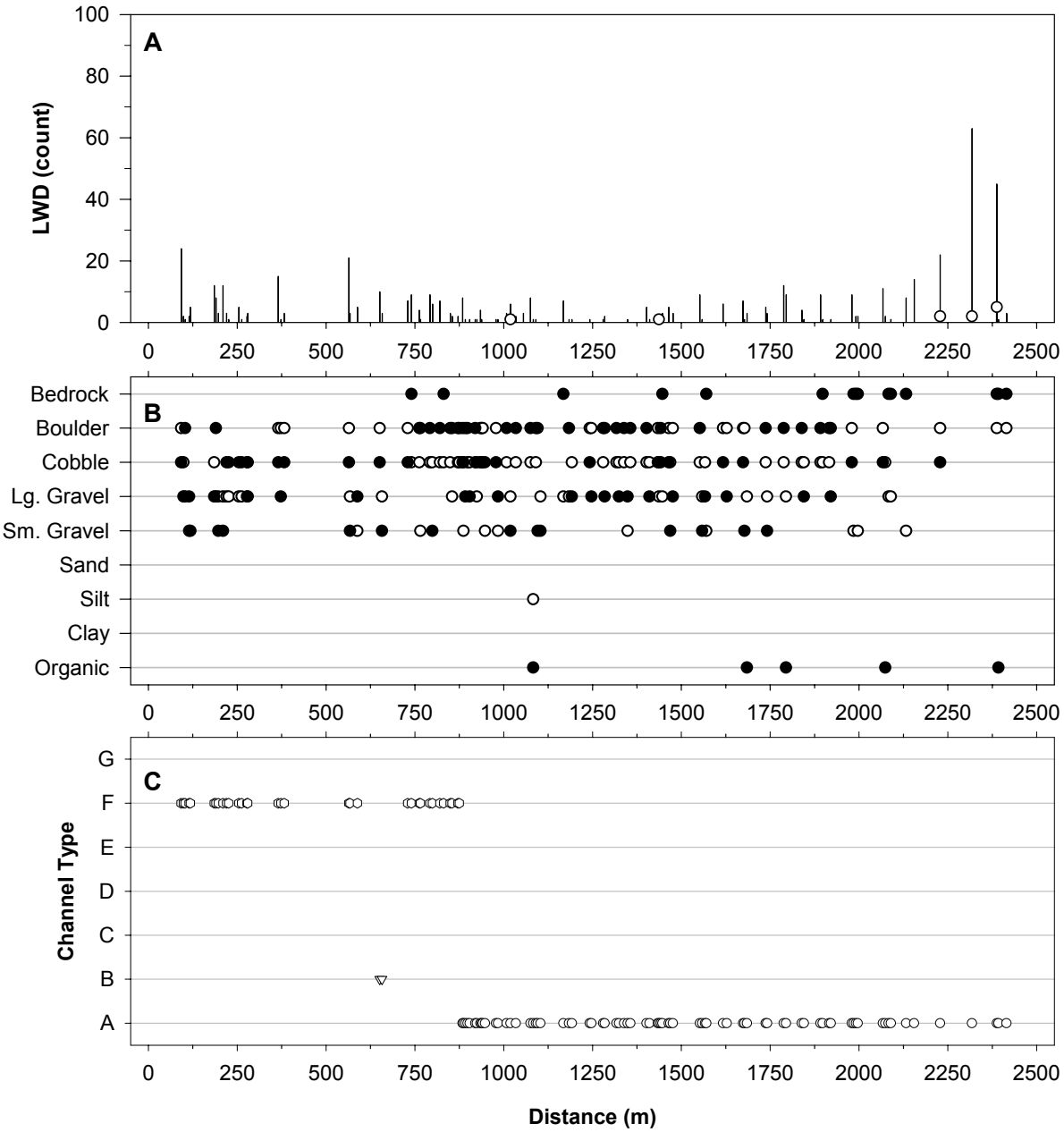


LWD per kilometer in Sugar Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

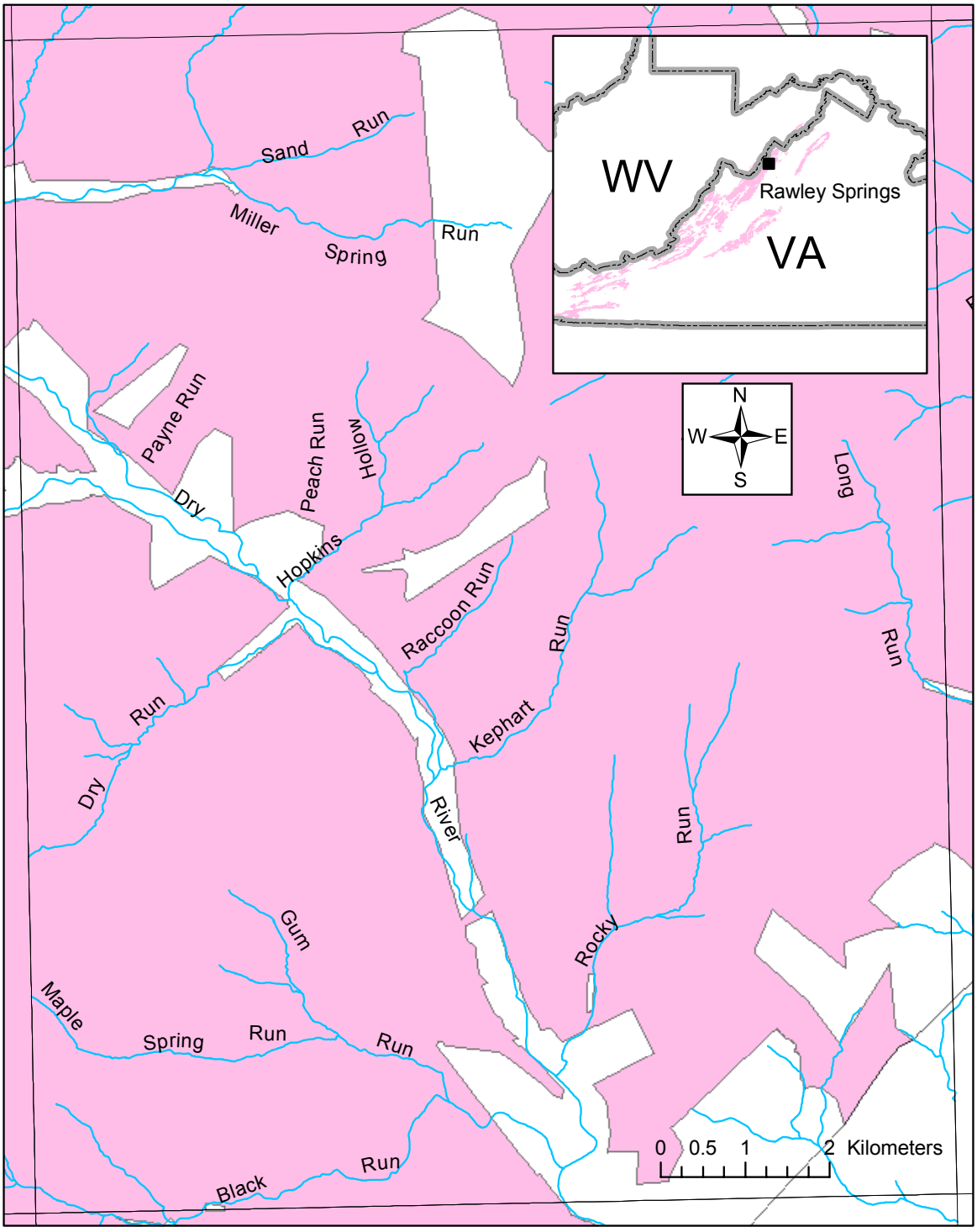
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Sugar Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	66.4	0.5	MOSTLY UNDERGROUND STARTED AT 11:00AM, DRIVING AND WALKING TIME
Side channel	118.6	0.8	OUT RIGHT, MUST HAVE WENT UNDERGROUND
Side channel	173.2	1	OUT RIGHT
Side channel	185	1.2	IN RIGHT
Side channel	282.9	1.9	RIGHT
Side channel	329		GOES OUT UNDERGROUND
Side channel	335.1	0.1	OUT RIGHT, MOSTLY UNERGROUND
Side channel	420	1.5	IN RIGHT
Side channel	428.4	1	IN LEFT
Tributary	588.1	0.1	RIGHT
Side channel	594	0.8	OUT RIGHT
Tributary	611	0.3	ON LEFT, 1ST RECOGNIZABLE TRIB ON MAP
Seep	708.8	0.3	MODERATE FLOW
Fall	740		APROXIMATELY 7M HIGH FORMING A HUGE, DEEP POOL
Side channel	877.3	0.2	RIGHT
Seep	894.1	0.1	LOW FLOW ON RIGHT
Tributary	1167.8	1.3	LEFT, PROBABLY THE TRIB ON THE MAP THAT LIES BETWEEN THE 2600FEET AND 3000FEET CONYOUR LINES
Tributary	1418.6		LEFT, PROBABLY UNDERGROUND
Tributary	1693.3	1	RIGHT, ON RIGHT, ON QUAD MAP AROUND THE 2400 CONTOUR LINE
Seep	2034	0.2	LET, LOW FLOW
Tributary	2155.2	1	RIGHT,WENT UP RIGHT SIDE SINCE IT HAS MORE WATER,AT THE CONFLUENCE THATS OBVIOUS ON THE MAP



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Sugar Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest/Private boundary about a mile upstream from Forest Road 240. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).



Streams inventoried on the Rawley Springs Quadrangle using BVET habitat surveys during summer 2002 and 2003.

Stream:	**Black Run (lower)**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/26/03
Downstream Starting Point:	FS boundary at FS Road 492
Total Distance Surveyed (km):	0.7

	Pools	**Riffles**
Percent of Total Stream Area:	35	65
Total Area (m^2):	2076±704	3850±1335
Correction Factor Applied:	1.09	1.11
Number of Paired Samples:	3	2
Total Count:	15	11
Number per km:	22	16
Mean Area (m^2):	138	350
Mean Maximum Depth (cm):	85	62
Mean Average Depth (cm):	54	34
Mean Residual Depth (cm):	23	--
Percent Surveyed as Glides:	33	--
Percent Surveyed as Runs:	--	9
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	13	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	75
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	103
> 5 m long, > 55 cm diameter:	0
Total:	178

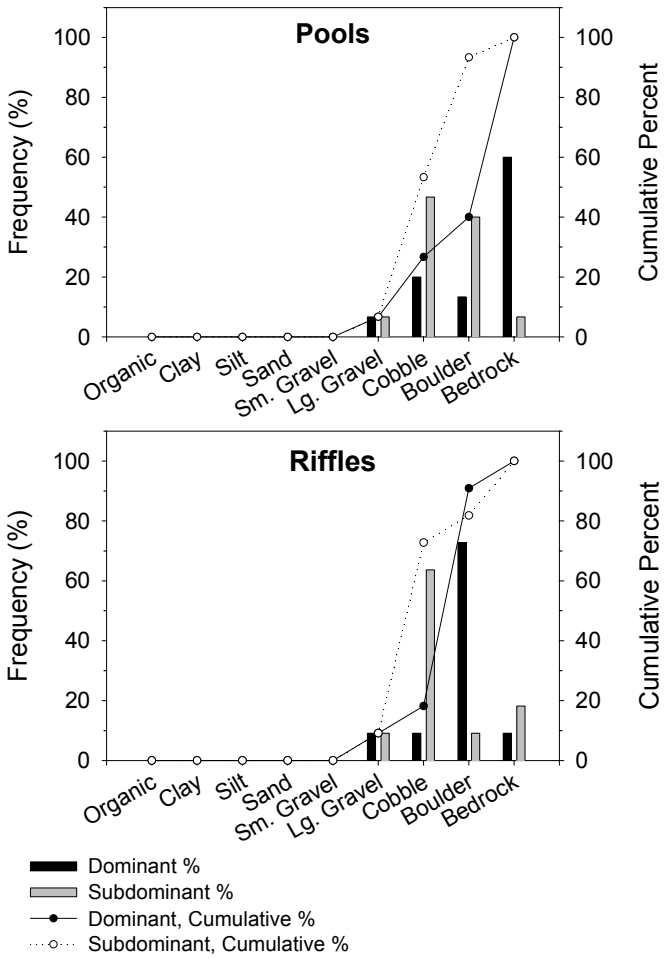
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	30	10
Maximum	41	20
75th Percentile	35	14
25th Percentile	24	5
Minimum	19	3

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

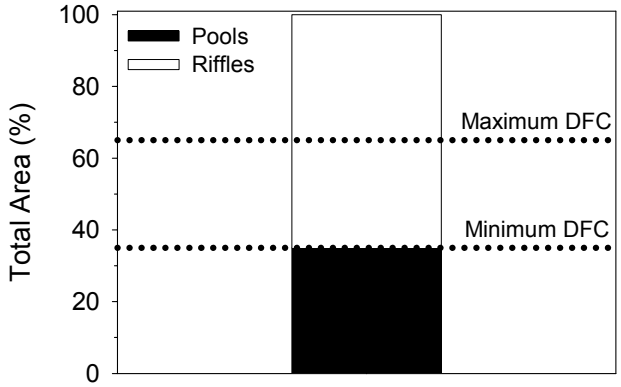
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

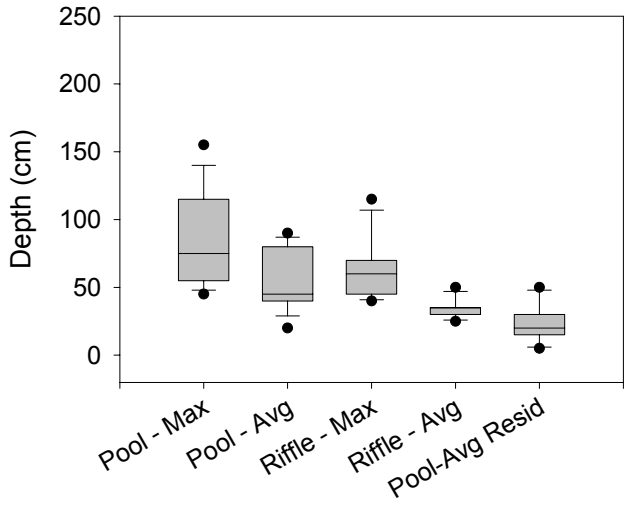
Other Stream Attributes	
Mean Bankfull Channel Width (m):	10
Mean Channel Gradient (%):	4
Median Water Temperature (C):	16



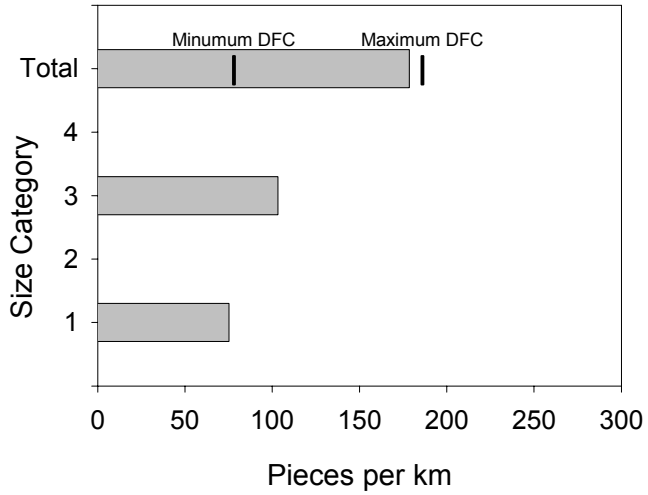
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Black Run (lower), summer 2003.



Estimated area of Black Run (lower) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Black Run (lower), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

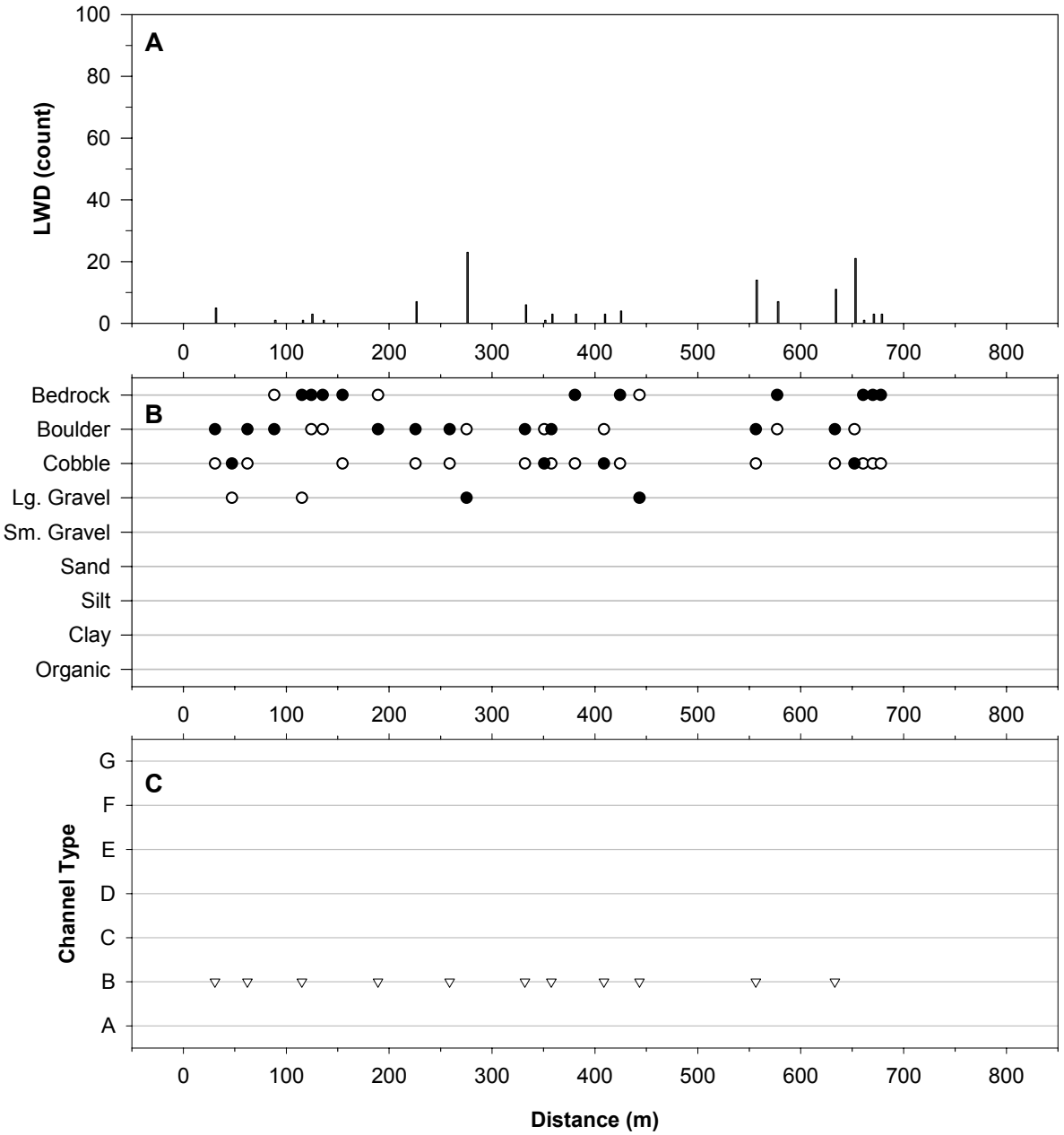


LWD per kilometer in Black Run (lower), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Black Run (lower) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	62.2	2	TRAIL CROSSING
Side channel	123.4	5.5	IN ON RIGHT
Ford	259	1.5	TRAIL CROSSING
Ford	538	1.5	TRAIL CROSSING
Ford	615	1.5	TRAIL CROSSING
Tributary	670.9	5	GUM RUN IN ON RIGHT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Black Run (lower), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary on Forest Road 492. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Black Run (upper)**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/26/03
Downstream Starting Point:	The confluence of Gum and Black Runs
Total Distance Surveyed (km):	8.0

	Pools	**Riffles**
Percent of Total Stream Area:	33	67
Total Area (m^2):	8967±1656	18447±4099
Correction Factor Applied:	1.00	1.07
Number of Paired Samples:	16	13
Total Count:	158	129
Number per km:	20	16
Mean Area (m^2):	57	143
Mean Maximum Depth (cm):	54	30
Mean Average Depth (cm):	36	17
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	1	--
Percent Surveyed as Runs:	--	4
Percent Surveyed as Cascades:	--	4
Percent with >35% Fines:	4	1

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	47
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	58
> 5 m long, > 55 cm diameter:	8
Total:	114

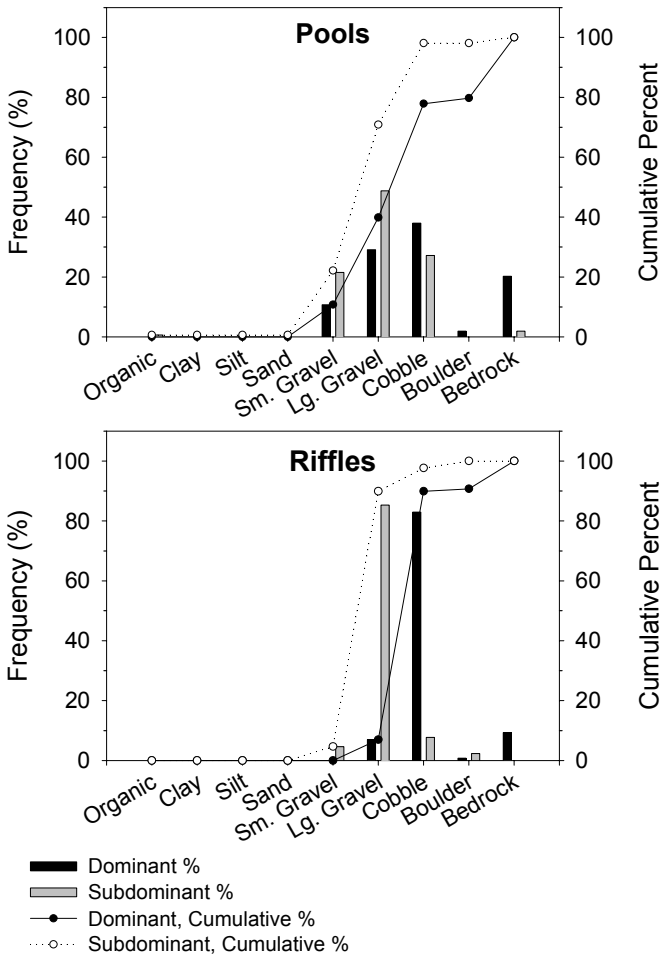
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	17	4
Maximum	26	17
75^{th} Percentile	23	5
25^{th} Percentile	11	1
Minimum	5	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

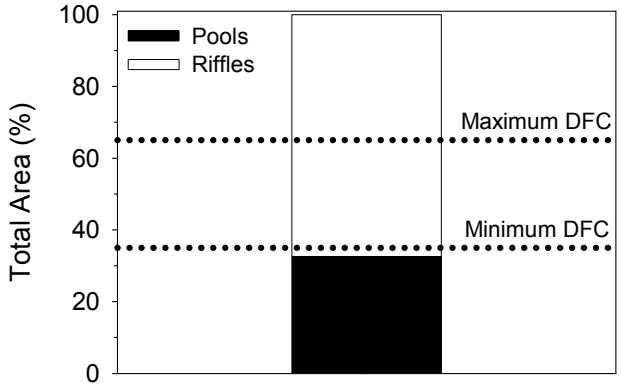
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	26
B:	74
C:	0
D:	0
E:	0
F:	0
G:	0

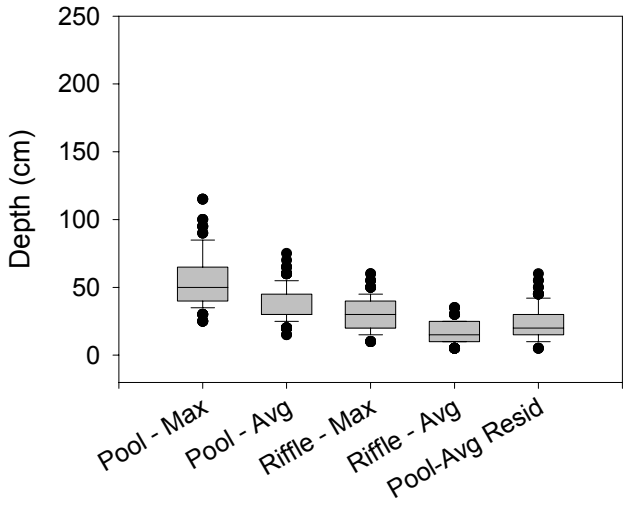
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	7
Median Water Temperature (C):	15



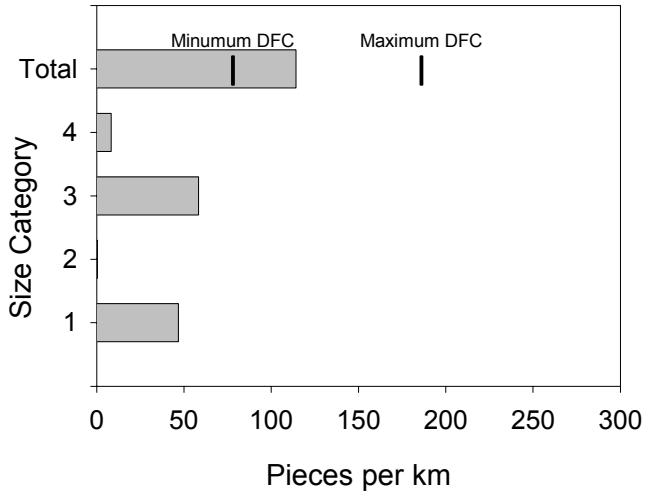
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Black Run (upper), summer 2003.



Estimated area of Black Run (upper) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Black Run (upper), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



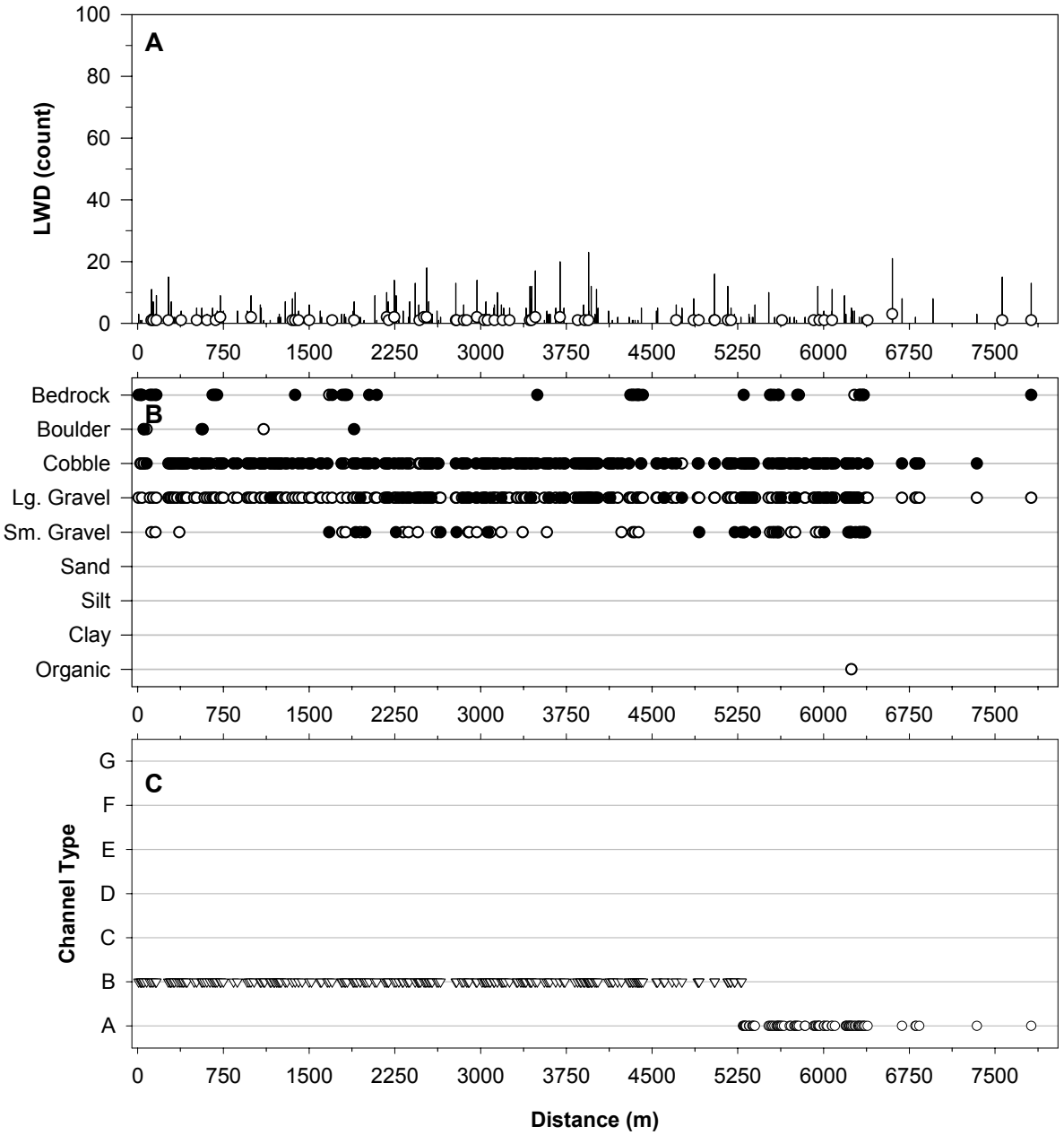
LWD per kilometer in Black Run (upper), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Black Run (upper) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	235.5		TRAIL COMING DOWN FROM CAMP SITE DOES NOT APPEAR TO CROSS TO OTHER SIDE THOUGH
Ford	484		TRAIL CROSSING
Ford	593.4		TRAIL CROSSING
Ford	703		TRAIL CROSSING
Ford	816.8		TRAIL CROSSING
Ford	1195		TRAIL CROSSING
Ford	1321		TRAIL CROSSING
Ford	3827.5		SUSPECT THIS ROAD TO BE 225 ON BRIERY BRANCH QUAD MAP
Ford	5640.5		ROAD CROSSING, FOREST ROAD 225 GOES FURTHER THAN SHOWN ON QUAD MAP
Ford	5944		OLD ROAD OR TRAIL CROSSING
Ford	6209		ROAD CROSSING, FOREST ROAD 225, NOT SHOWN ON MAP
Other	1965		CAMPSITE
Other	2910.3		MUD SLIDE ON LEFT SIDE OF STREAM NO TREES BROUGHT DOWN
Side channel	113.5	1.5	ON LEFT SIDE, COMES IN.
Side channel	145.9		GOES OUT
Side channel	703		COMES IN ON LEFT, MOSTLY UNDERGROUND
Side channel	1195	1	COMES IN ON LEFT
Side channel	1321	1.2	COMES IN ON RIGHT
Side channel	1351	1	GOES OUT ON RIGHT
Side channel	1866	2.5	COMES IN ON LEFT
Side channel	1897		GOES OUT ON LEFT
Side channel	2195.9	1	COMES IN ON RIGHT
Side channel	2245		GOES OUT ON RIGHT
Side channel	2287.6	2	COMES IN ON LEFT
Side channel	2427.6		GOES OUT ON LEFT
Side channel	2525.7	1	COMES IN ON RIGHT
Side channel	2783	1.5	COMES IN ON RIGHT
Side channel	2907.5	1	COMES IN ON RIGHT
Side channel	3033	1	COMES IN ON RIGHT
Side channel	3086	1	COMES IN ON LEFT
Side channel	3114.9	2.5	GOES OUT ON LEFT
Side channel	3613	1.5	COMES IN ON RIGHT
Side channel	3663		GOES OUT ON RIGHT
Side channel	4380	1	COMES IN ON RIGHT
Side channel	4488.7	1.5	COMES IN ON RIGHT
Side channel	4731	1.5	
Side channel	6079	0.5	COMES IN ON LEFT
Side channel	6104		GOES OUT ON LEFT, DRY
Seep	334.2		ON RIGHT, STEADY FLOW
Seep	746.7		ON RIGHT, SLOW FLOW
Seep	1009.2		

Seep	1786.4		ON RIGHT, STEADY FLOW
Seep	1856		ON LEFT, SLOW FLOW
Seep	2005.3		ON RIGHT, STEADY FLOW
Seep	4711.2		ON LEFT, SCATTERED BUT STEADY FLOW
Tributary	1321	1	ON RIGHT, CONNECTS WITH SIDE CHANNEL
Tributary	1460	0.5	FIRST UNNAMED TRIB ON LEFT AS SHOWN ON RAWLEY SPRINGSQUAD MAP
Tributary	2040.9	1	FIRST UNNAMED TRIB ON RIGHT AS SHOWN ON RAWLEY SPRINGSQUAD MAP, EXTREMELY STEEP (AROUND 65 DEGREES)
Tributary	2076	1.5	SECOND UNNAMED TRIB ON LEFT AS SHOWN ON RAWLEY SPRINGS QUAD MAP
Tributary	2867.8	0.5	DRY TRIB ON RIGHT
Tributary	3385	0.2	MOSTLY DRY TRIB ON LEFT
Tributary	3712.9	0.5	ON RIGHT
Tributary	3921.8	1.5	ON RIGHT
Tributary	4098.6	1	STEEP TRIB ON LEFT, POSSIBLY THIRD TRIB ON LEFT AS SHOWN ON BRIERY BRANCH QUAD MAP
Tributary	4162	1	ON LEFT, MORE LIKELY TO BE THE THIRD TRIB ON LEFT AS SHOWN ON BRIERY BRANCH QUAD MAP DUE TO THE CONTOURS IN THAT AREA WHICH INDICATE A FLATER TERRAIN
Tributary	4722	1	ON LEFT, UNNAMED TRIB SHOWN ON BRANDYWINE QUAD MAP
Tributary	5926.3		ON LEFT, ASSUMED TO BE UNNAMED TRIB ON BRANDYWINE QUAD MAP
Tributary	5960.2	0.2	MOSTLY DRY TRIB ON LEFT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Black Run (upper), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary on Forest Road 492. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Dry Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	07/23/02
Downstream Starting Point:	FS Boundary above the reservoir off FS road 304
Total Distance Surveyed (km):	3.1

	Pools	**Riffles**
Percent of Total Stream Area:	19	81
Total Area (m^2):	1293±196	5458±671
Correction Factor Applied:	0.99	1.09
Number of Paired Samples:	5	6
Total Count:	54	56
`Number per km:	18	18
Mean Area (m^2):	24	97
Mean Maximum Depth (cm):	35	19
Mean Average Depth (cm):	23	11
Mean Residual Depth (cm):	12	--
Percent Surveyed as Glides:	4	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	65
< 5 m long, > 55 cm diameter:	4
> 5 m long, 10 cm – 55 cm diameter:	40
> 5 m long, > 55 cm diameter:	13
Total:	122

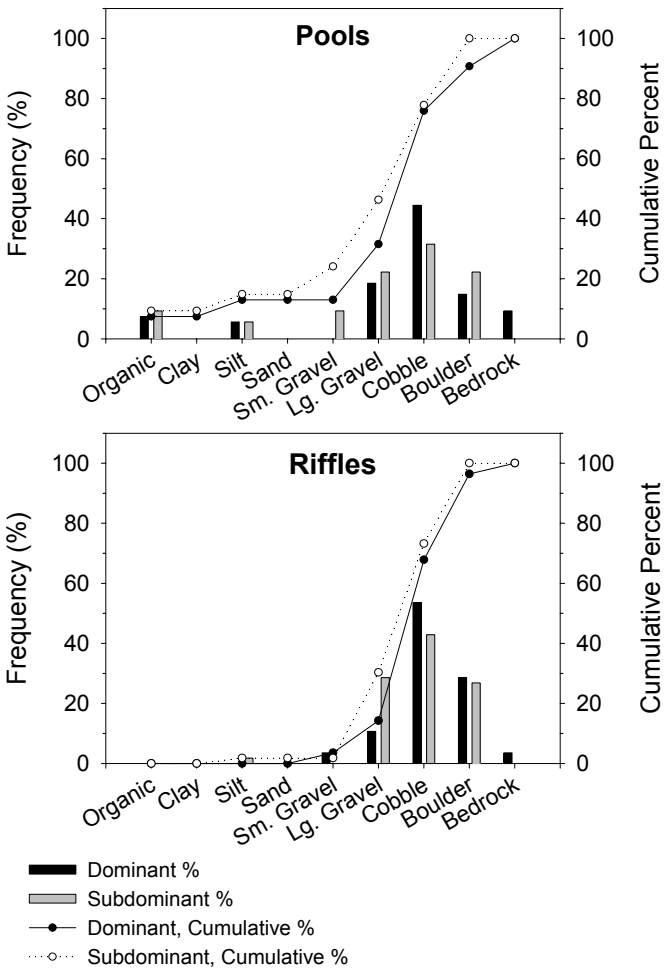
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	19	6
Maximum	42	27
75th Percentile	22	7
25th Percentile	11	2
Minimum	9	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

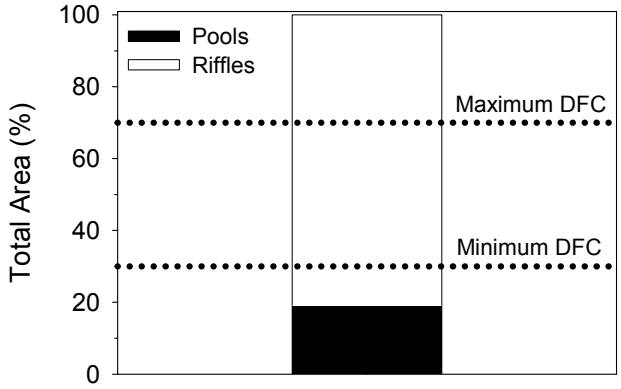
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

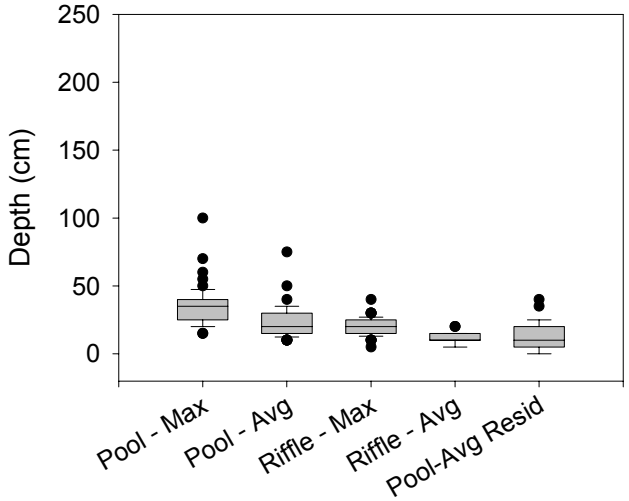
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	4
Median Water Temperature (C):	18



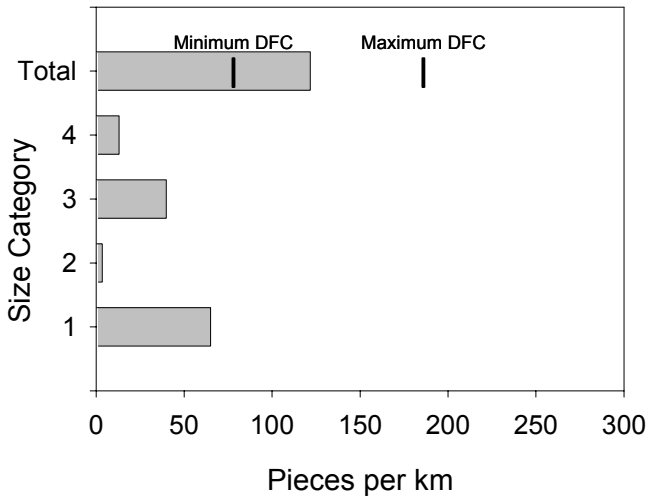
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Dry Run, summer 2002.



Estimated area of Dry Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Dry Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

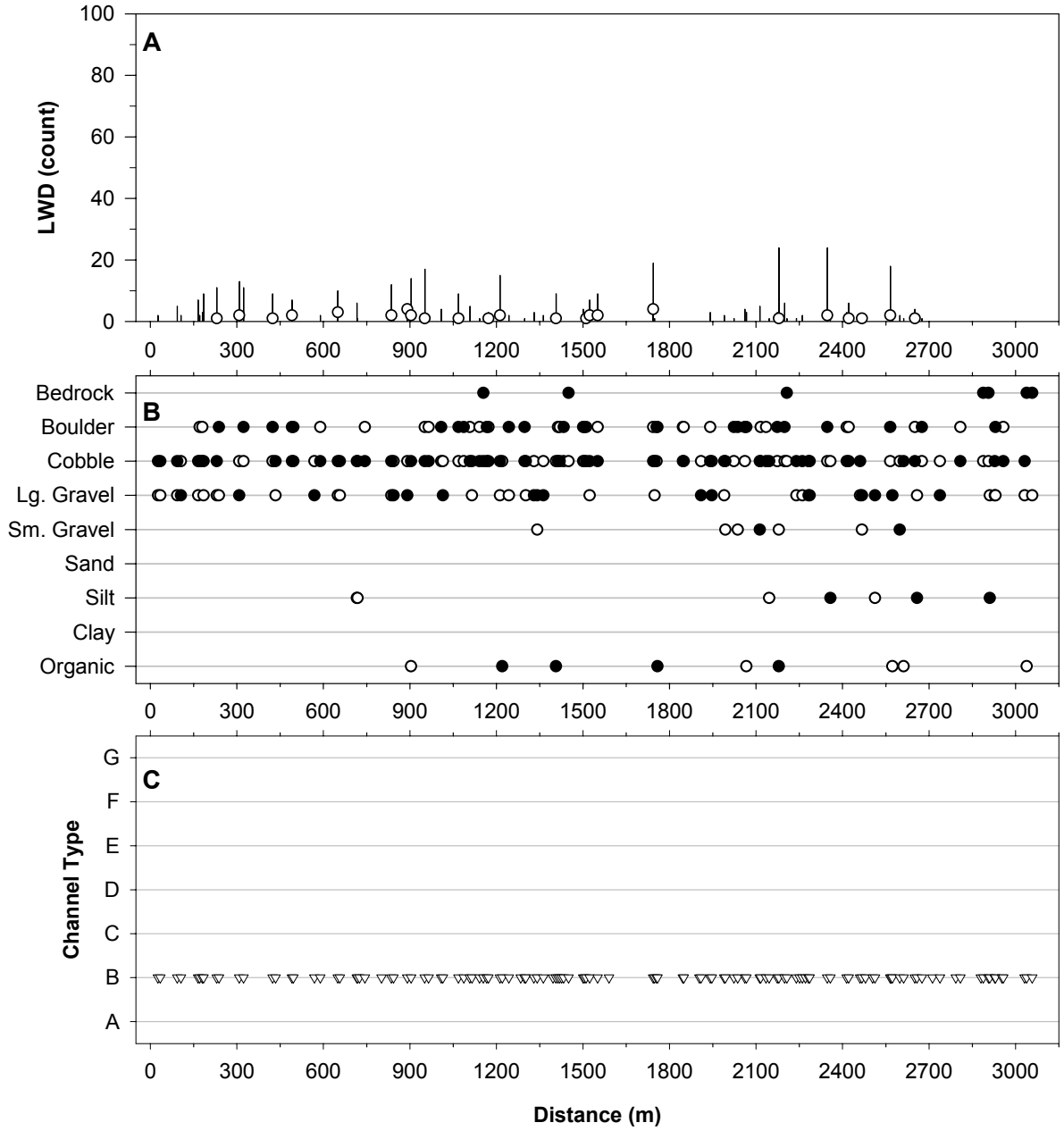


LWD per kilometer in Dry Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Dry Run during BVET habitat survey, summer 2002. Distance is meters fromstart of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	351.8		on right, dry
Tributary	411.5		on right, dry
Trail Crossing	558.3		
Tributary	713.2		on right, dry
Underground	725.3		from 718.2 m to 725.3 m
Underground	801.3		from 744.0 m to 801.3 m
Tributary	1057.7		on right, dry
Tributary	1157.9	0.5	on left
Underground	1284.0		from 1243.0 m to 1284.0 m
Underground	1396.1		from 1362.6 m to 1396.1 m
Underground	1426.0		from 1419.2 m to 1426.0 m
Tributary	1537.1		on right, dry
Underground	1590.2		from 1550.9 m to 1590.2 m
Tributary	1651.1		on right, dry
Underground	1904.0		from 1849.5 m to 1904.0 m
Underground	2250.9		from 2240.0 m to 2250.9 m
Underground	2271.3		from 2260.4 m to 2271.3 m
Tributary	2357.6		on right, dry
Underground	2504.2		from 2479.4 m to 2504.2 m
Underground	2568.8		from 2565.4 m to 2568.8 m
Underground	2712.0		from 2674.9 m to 2712.0 m
Underground	2792.9		from 2737.7 m to 2792.9 m
Underground	2879.9		from 2808.4 m to 2879.9 m
Underground	2952.7		from 2930.1 m to 2952.7 m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Dry Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary above reservoir. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Gum Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/10/03
Downstream Starting Point:	Confluence of Black Run
Total Distance Surveyed (km):	5.7

	Pools	**Riffles**
Percent of Total Stream Area:	19	81
Total Area (m^2):	4470±293	19513±1979
Correction Factor Applied:	1.03	1.17
Number of Paired Samples:	16	15
Total Count:	168	155
Number per km:	30	27
Mean Area (m^2):	27	126
Mean Maximum Depth (cm):	46	36
Mean Average Depth (cm):	31	20
Mean Residual Depth (cm):	5	--
Percent Surveyed as Glides:	26	--
Percent Surveyed as Runs:	--	1
Percent Surveyed as Cascades:	--	19
Percent with >35% Fines:	11	3

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	85
< 5 m long, > 55 cm diameter:	3
> 5 m long, 10 cm – 55 cm diameter:	110
> 5 m long, > 55 cm diameter:	11
Total:	209

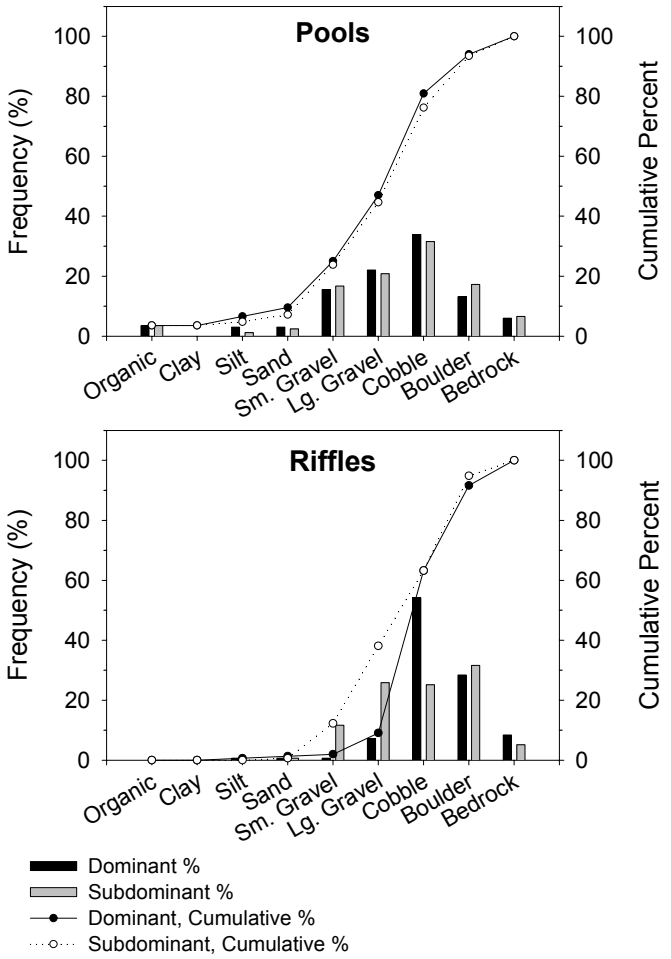
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	14	4
Maximum	28	18
75th Percentile	17	7
25th Percentile	9	1
Minimum	6	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

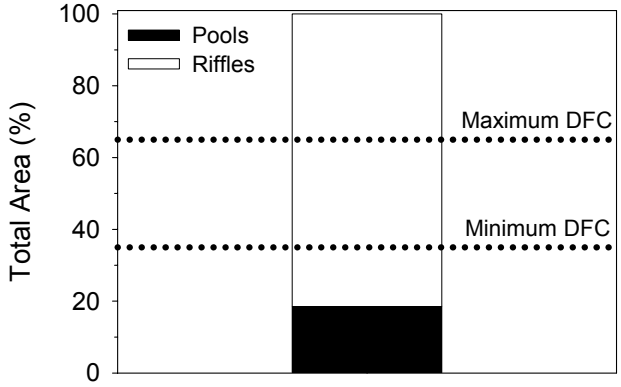
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	62
B:	25
C:	0
D:	0
E:	0
F:	13
G:	0

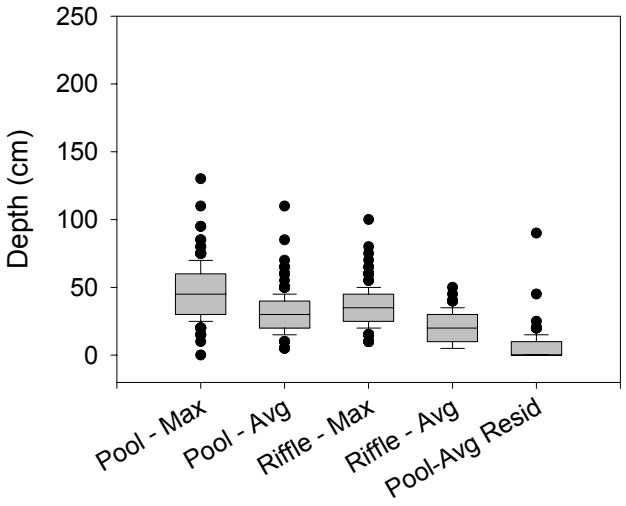
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	10
Median Water Temperature (C):	13.5



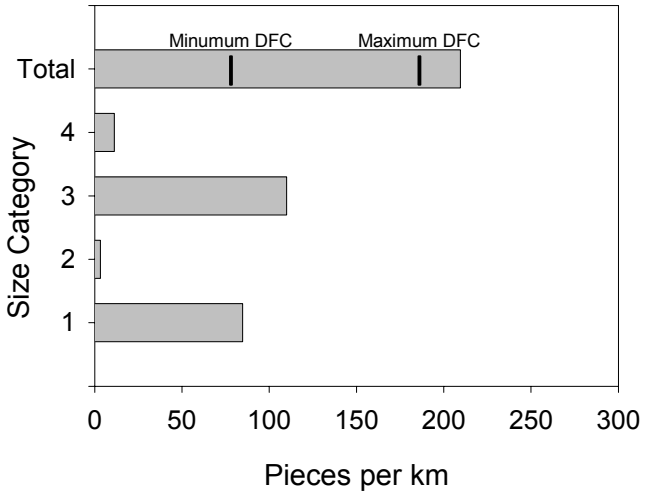
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Gum Run, summer 2003.



Estimated area of Gum Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Gum Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



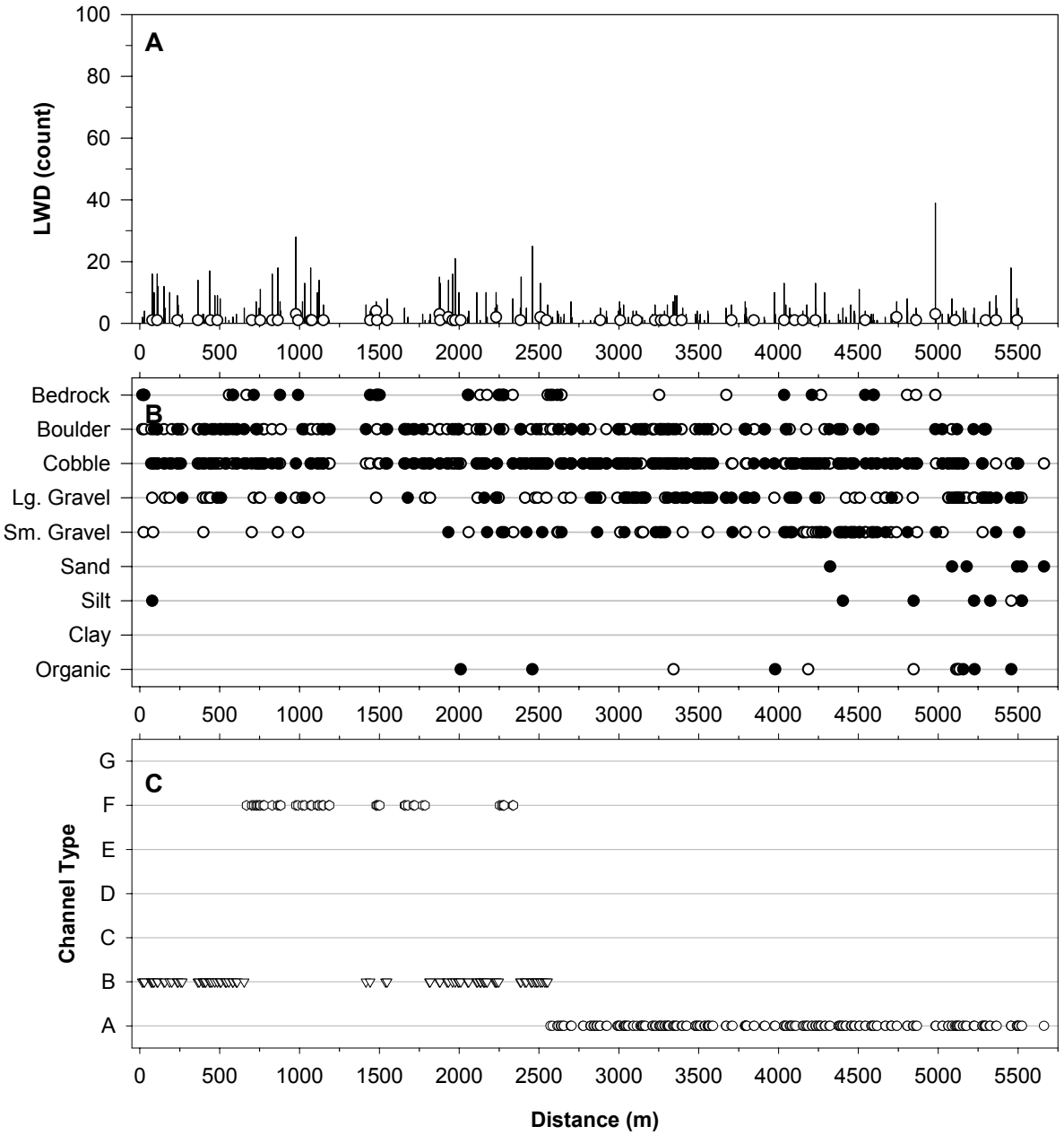
LWD per kilometer in Gum Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Gum Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	77.3	3	IN RIGHT
Side channel	178	3	OUT RIGHT
Seep	545	0.7	ON RIGHT, STEADY FLOW
Seep	578	0.3	ON LEFT, STEADY FLOW
Seep	713.3	0.5	ON RIGHT, STEADY FLOW
Side channel	749	1.5	IN RIGHT
Ford	796		TRAIL CROSSING, POSSIBLE DOWN TELEPHONE POLE WITH CABLE ATTACHED
Side channel	796	1.5	OUT LEFT
Side channel	816		IN LEFT
Seep	950	0.5	ON RIGHT, STEADY FLOW
Side channel	1111.1	2	IN RIGHT
Side channel	1265	0.7	IN RIGHT
Side channel	1345	1.5	OUT RIGHT
Side channel	1345	1.3	IN LEFT
Side channel	1398	1.5	OUT RIGHT
Ford	1400		TRAIL
Seep	1455	2	ON RIGHT, STEADY FLOW
Side channel	1533	1.5	IN LEFT
Tributary	1786	4	IN LEFT, MAPLE SPRING RUN
Side channel	1864	1.5	IN LEFT
Side channel	1924	1.5	OUT LEFT
Seep	2308	0.2	ON LEFT, STEADY FLOW
Seep	2382.4	1	ON RIGHT, STEADY FLOW
Ford	2460		TRAIL
Seep	2460	0.5	ON LEFT, STEADY FLOW
Tributary	2558	1.5	IN LEFT
Tributary	2674	0.1	ON RIGHT
Seep	3092.5	0.2	ON RIGHT, STEADY FLOW
Ford	3147		TRAIL CROSSING
Seep	3253	1	ON LEFT, STEADY FLOW
Tributary	3320	1	ON LEFT
Tributary	3509		ON RIGHT, DRIED UP
Tributary	3639	1.5	ON RIGHT, UNNAMED TRIB SHOWN ON MAP
Ford	3691		TRAIL CROSSING, TRAIL IS NOW ON RIGHT SIDE
Ford	3735		POOR TRAIL
Tributary	4082	0.2	ON RIGHT
Seep	4287.5	0.3	ON LEFT, SLOW FLOW COMPARED TO OTHER SEEPS ON THIS STREAM
Tributary	4307	4	ON RIGHT, 1 CM DEEP
Seep	4490	0.5	ON LEFT,STEADY FLOW
Seep	4750	0.3	ON LEFT, STEADY FLOW
Seep	4772	0.5	ON LEFT, STEADY FLOW
Ford	4814		TRAIL CROSSING
Tributary	4960	0.2	ON RIGHT

Seep	4990		ON RIGHT, LOW FLOW
Seep	5077	1	ON LEFT, LOW FLOW
Seep	5500	1	ON RIGHT, STEADY FLOW



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Gum Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence of Black Run. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hopkins Hollow**
District:	Dry River Ranger
USGS Quadrangle:	Rawley Springs
Survey Date:	07/24/02
Downstream Starting Point:	FS Boundary
Total Distance Surveyed (km):	2.1

	Pools	**Riffles**
Percent of Total Stream Area:	42	58
Total Area (m^2):	1115±24	1544±340
Correction Factor Applied:	1.05	0.99
Number of Paired Samples:	5	4
Total Count:	56	44
Number per km:	27	21
Mean Area (m^2):	20	35
Mean Maximum Depth (cm):	29	15
Mean Average Depth (cm):	18	8
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:	9	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	2
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	123
< 5 m long, > 55 cm diameter:	11
> 5 m long, 10 cm – 55 cm diameter:	93
> 5 m long, > 55 cm diameter:	9
Total:	236

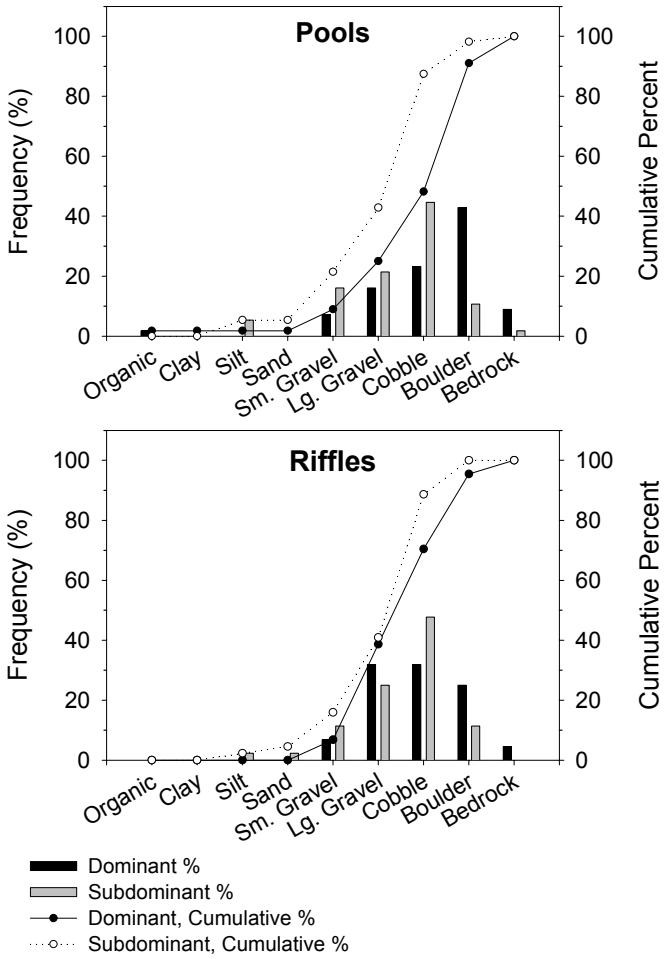
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	14	3
Maximum	17	9
75th Percentile	15	4
25th Percentile	12	1
Minimum	11	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

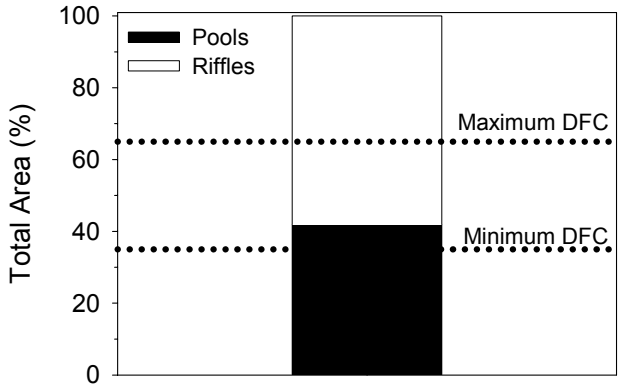
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

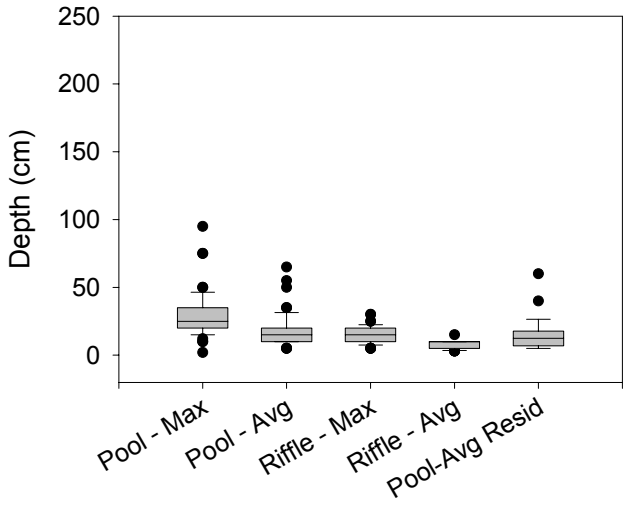
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	8
Median Water Temperature (C):	16



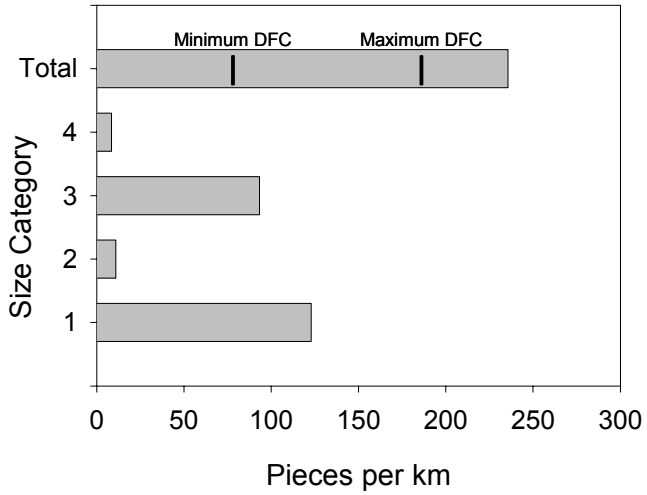
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hopkins Hollow, summer 2002.



Estimated area of Hopkins Hollow in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Hopkins Hollow, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

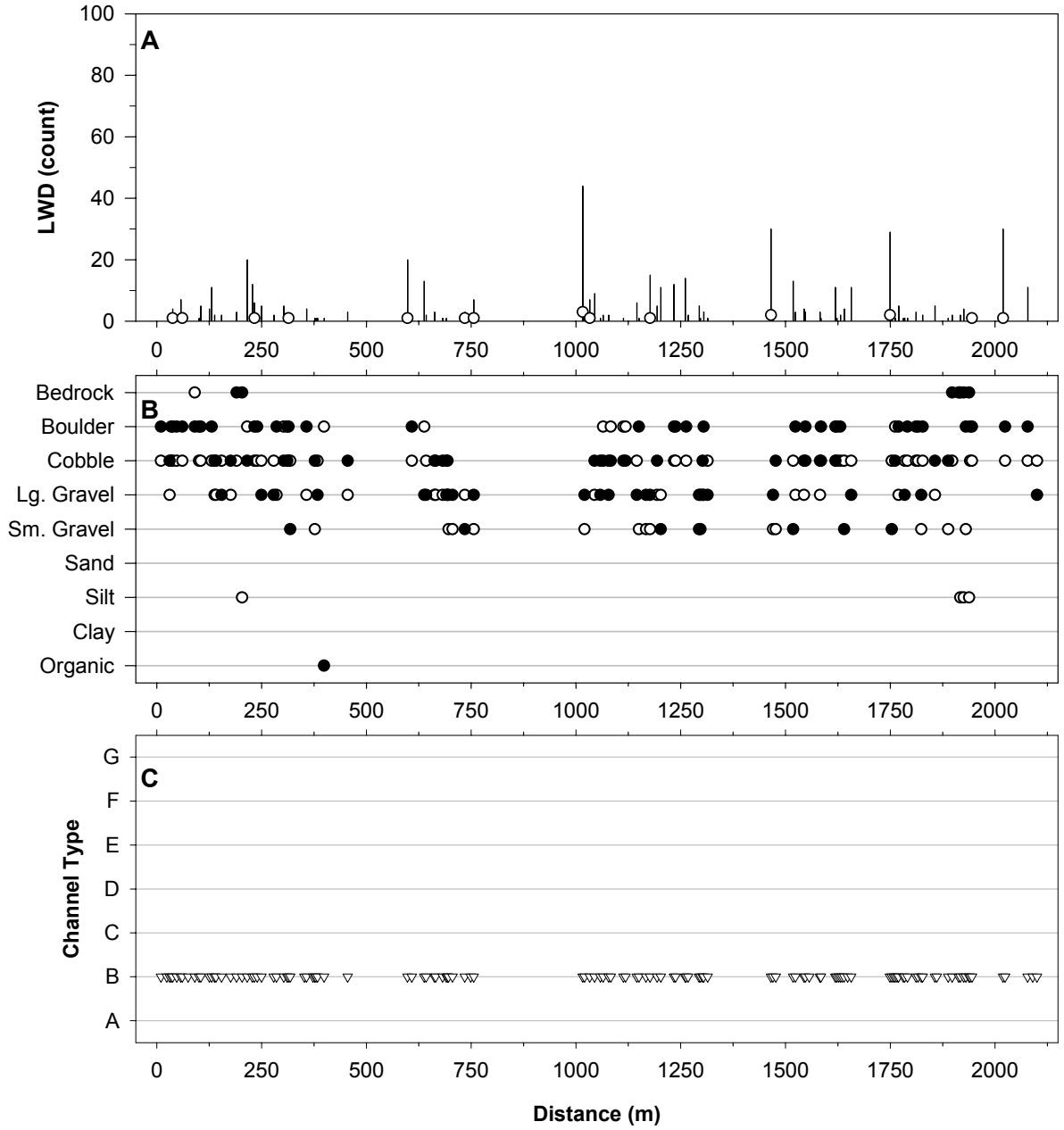


LWD per kilometer in Hopkins Hollow, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hopkins Hollow during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	23.9		from 10.1 m to 23.9 m
Underground	57.3		from 47.7 m to 57.3 m
Underground	74.9		from 60.9 m to 74.9 m
Underground	125.4		from 104.9 m to 125.4 m
Seep	207	1	on right
Underground	228.1		from 215.6 m to 228.1 m
Tributary	306.7	0.5	on right
Side Channel In	329.1	2.5	on right
Underground	352		from 318.2 m to 352.0 m
Underground	372.8		from 357.3 m to 372.8 m
Side Channel In	372.8	1	on left
Underground	379.4		from 376.9 m to 379.4 m
Side Channel In	385		on left
Trail Crossing	490		
Side Channel Out	490		on left
Underground	598.2		from 455.3 m to 598.2 m
Underground	749.1		from 735.0 m to 749.1 m
Side Channel In	754.8	1	on left
Side Channel In	835.3		on right, dry
Side Channel Out	854.7		on left
Underground	1015.9		from 756.0 m to 1015.9 m
Underground	1032.9		from 1020.6 m to 1032.9 m
Trail Crossing	1105		
Trail Crossing	1178		
Tributary	1205.4	1.5	on right
Side Channel In	1246.9		on left, dry
Side Channel Out	1256.4		on right, flows into Tributary
Underground	1260.5		from 1233.8 m to 1260.5 m
Underground	1267.7		from 1262.8 m to 1267.7 m
Side Channel Out	1297		on left
Side Channel In	1322.2		on right
Side Channel Out	1340		on right
Trail Crossing	1440		
Underground	1465.1		from 1314.2 m to 1465.1 m
Underground	1556.7		from 1547.2 m to 1556.7 m
Side Channel In	1556.7		on left
Underground	1626.7		from 1622.3 m to 1626.7 m
Seep	1634.8	0.5	on left
Underground	1635		from 1630.7 m to 1635.0 m
Underground	1648.2		from 1639.9 m to 1648.2 m
Underground	1749.2		from 1656.5 m to 1749.2 m
Underground	1757.9		from 1753.3 m to 1757.9 m
Underground	1765.8		from 1761.6 m to 1765.8 m
Underground	1860.7		from 1856.3 m to 1860.7 m
Underground	2018.9		from 1944.9 m to 2018.9 m
Trail Crossing	2083		
Underground	2089.8		from 2077.7 m to 2089.8 m
Tributary	2100		dry



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hopkins Hollow, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Private land and Forest boundary North of Route 33. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Kephart Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	07/22/02
Downstream Starting Point:	USFS Boundary at State route 33
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	*--	*--
Total Area (m^2):	41±*--	*--±*--
Correction Factor Applied:	1.04	*--
Number of Paired Samples:	1	0
Total Count:	4	1
Number per km:	5	1
Mean Area (m^2):	10	*--
Mean Maximum Depth (cm):	23	10
Mean Average Depth (cm):	13	5
Mean Residual Depth (cm):	*--	*--
Percent Surveyed as Glides:	0	* --
Percent Surveyed as Runs:	*--	0
Percent Surveyed as Cascades:	*--	0
Percent with >35% Fines:	--**	--**

*could not calculate
**data not collected in 2002

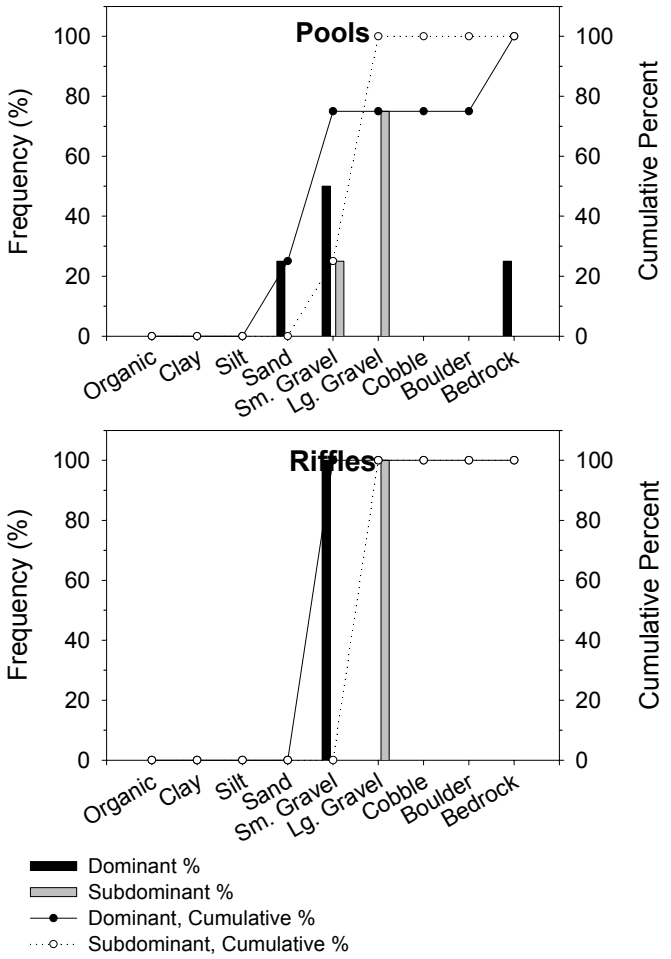
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	1
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	1
> 5 m long, > 55 cm diameter:	0
Total:	3

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	--	--
Maximum	0	0
75th Percentile	--	--
25th Percentile	--	--
Minimum	0	0

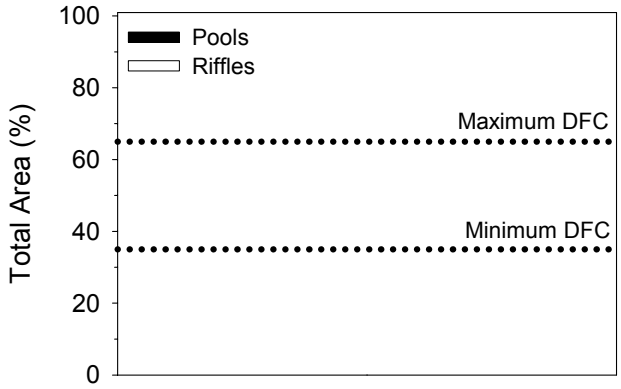
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

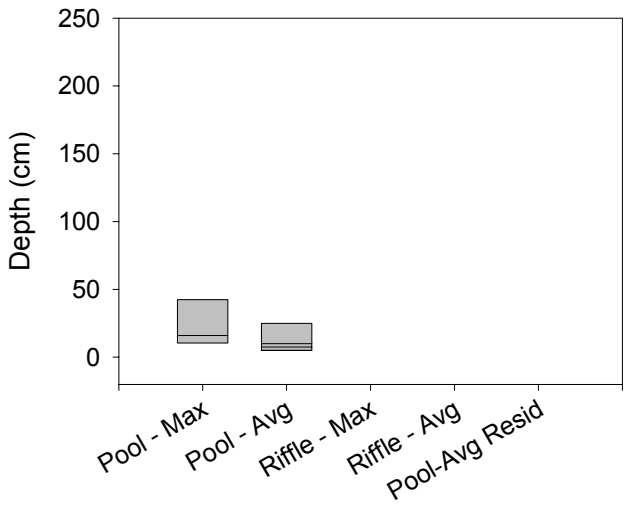
Other Stream Attributes	
Mean Bankfull Channel Width (m):	--
Mean Channel Gradient (%):	--
Median Water Temperature (C):	18



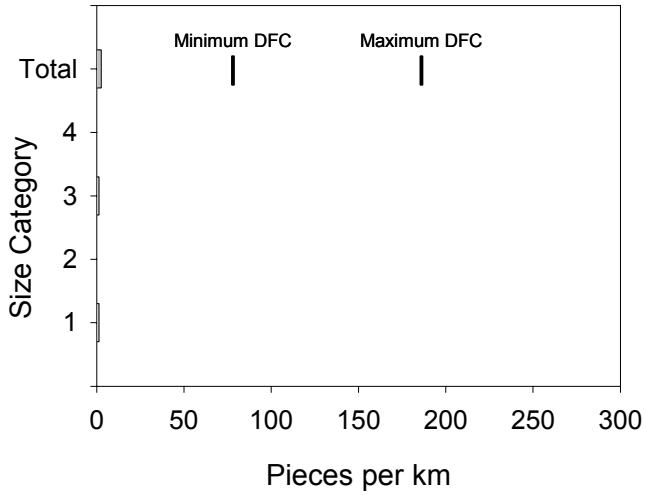
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Kephart Run, summer 2002.



Estimated area of Kephart Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Kephart Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

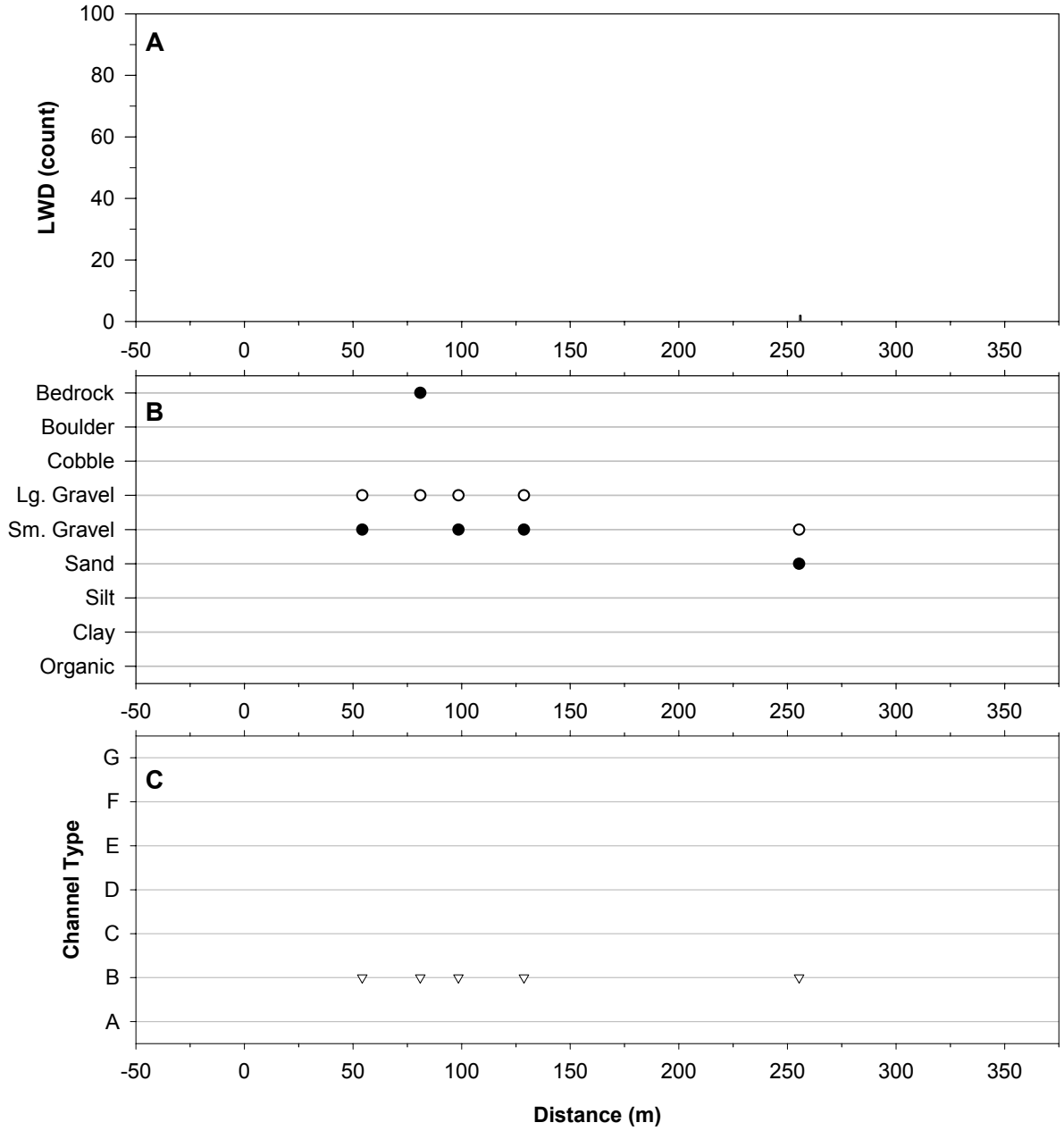


LWD per kilometer in Kephart Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Kephart Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	27.2	--	from 0.0 m to 27.2 m
Underground	75.0	--	from 54.2 m to 75.0 m
Underground	93.8	--	from 80.9 m to 93.8 m
Tributary	112.5	--	on right, dry
Underground	125.3	--	from 98.5 m to 125.3 m
Underground	249.8	--	from 128.7 m to 249.8 m
Side Channel	360.2	--	In on left
Side Channel	410.8	--	Out on left
Tributary	467.8	--	on left
Underground	755.8	--	from 255.4 m to 755.8 m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Kephart Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from bridge on route 33. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Long Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/25/03
Downstream Starting Point:	USFS upstream from first trib on left on the Rawley Springs quad, boundary on quad map appears to be a little off
Total Distance Surveyed (km):	5.6

	Pools	**Riffles**
Percent of Total Stream Area:	22	78
Total Area (m^2):	3693±179	13237±2520
Correction Factor Applied:	1.04	1.02
Number of Paired Samples:	8	6
Total Count:	86	70
Number per km:	15	12
Mean Area (m^2):	43	189
Mean Maximum Depth (cm):	54	30
Mean Average Depth (cm):	36	18
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:	2	--
Percent Surveyed as Runs:	--	3
Percent Surveyed as Cascades:	--	4
Percent with >35% Fines:	8	1

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	77
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	38
> 5 m long, > 55 cm diameter:	5
Total:	119

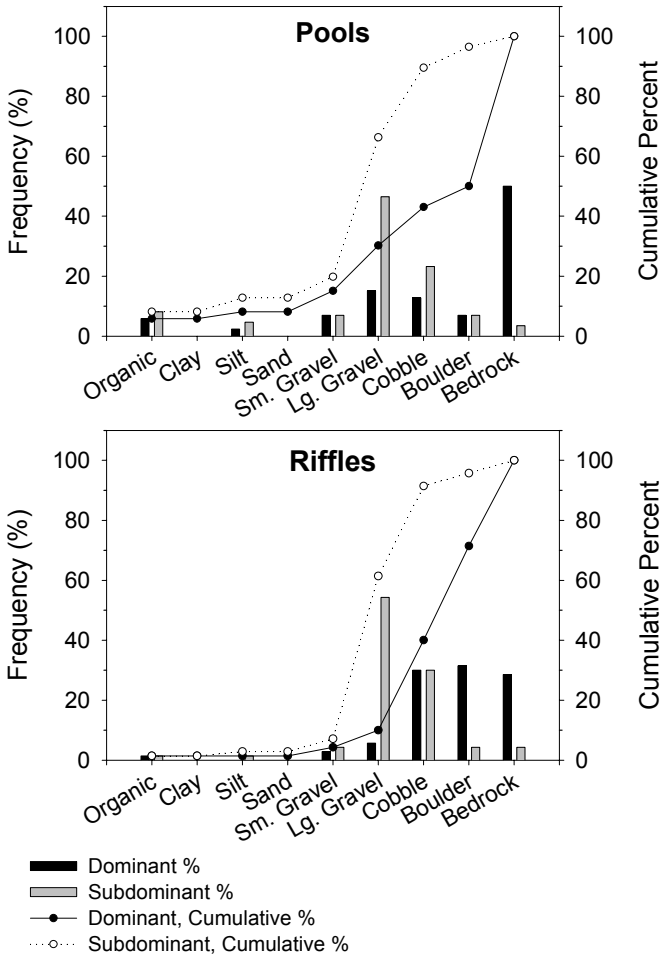
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	10	2
Maximum	11	6
75^{th} Percentile	10	2
25^{th} Percentile	9	1
Minimum	9	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

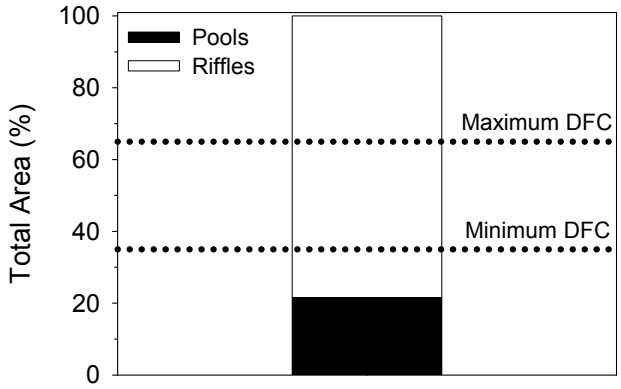
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	2
B:	98
C:	0
D:	0
E:	0
F:	0
G:	0

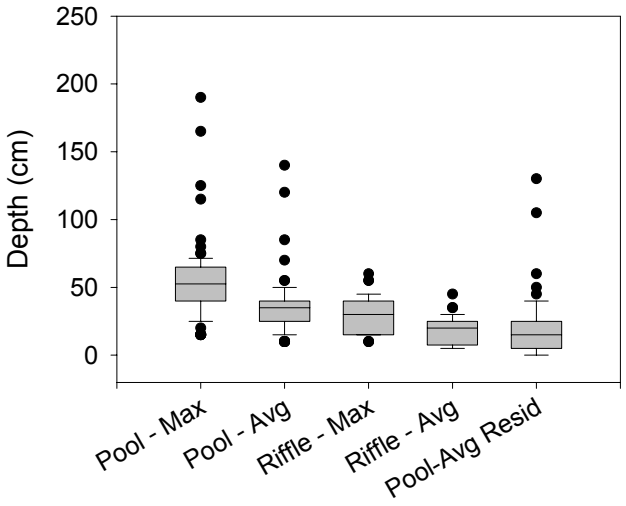
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	5
Median Water Temperature (C):	16



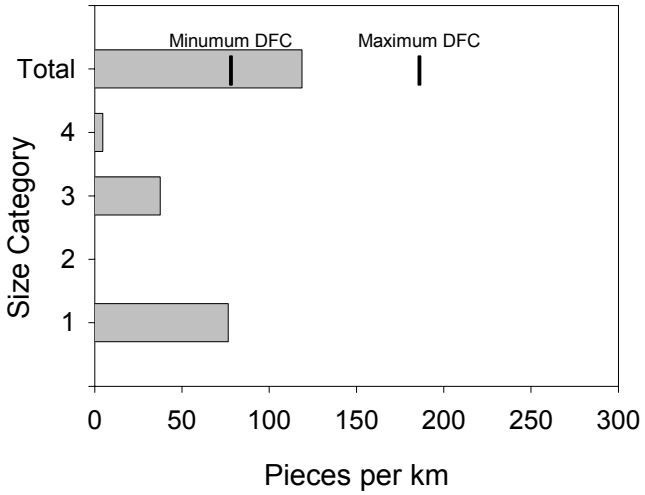
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Long Run, summer 2003.



Estimated area of Long Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Long Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

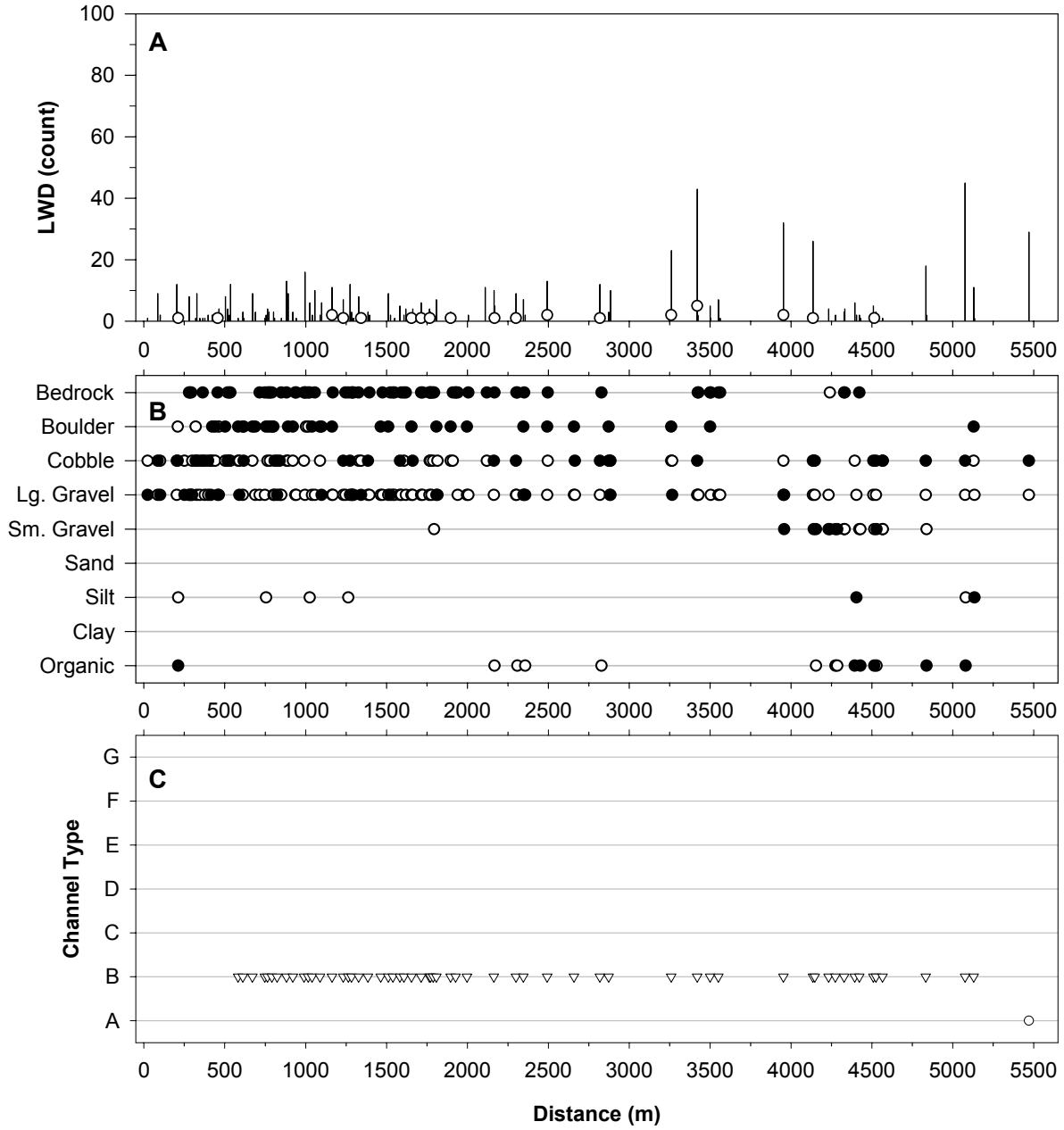


LWD per kilometer in Long Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Long Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	145.8		THERE IS ANOTHER USFS BOUNDARY CROSSING THE STREAM HERE; CONTINUING SURVEY FROM ORIGINAL START POINT
Side channel	187.1	1	IN ON RIGHT
Tributary	413.9		IN ON RIGHT DRY
Side channel	512.7		IN ON RIGHT DRY
Seep	552		TRICKLES IN ON LEFT
Tributary	558	0.7	IN ON LEFT
Tributary	871.4	1	IN ON LEFT
Seep	941		TRICKLES IN ON LEFT
Tributary	1050.1	1	IN ON LEFT
Seep	1064.8	0.7	IN ON RIGHT
Tributary	1245.7	1	IN ON RIGHT
Tributary	1280.6	0.5	IN ON LEFT
Ford	1440.7		TRAIL CROSSING; LOOKS LIKE OLD ROADBED; TRAIL ON MAP CROSSING STREAM RIGHT TO LEFT FACING UPSTREAM
Side channel	1947.2	2.2	IN ON RIGHT
Tributary	1947.2	1.5	IN ON LEFT; CROSSES TRAIL BEFORE ENTERING STREAM
Side channel	1968.7	2	OUT ON RIGHT
Ford	2177.7		TRAIL ON MAP CROSSES STREAM; OLD ROADBED
Ford	2251.7		TRAIL ON MAP CROSSES STREAM
Ford	2415.1		TRAIL ON MAP CROSSES STREAM
Ford	2455.8		THE TRAIL CROSSES THE STREAM
Tributary	2534.4		IN ON LEFT DRY
Ford	3076.5		TRAIL ON MAP CROSSES STREAM
Tributary	3085.7	2	IN ON LEFT; TRIB ON MAP
Ford	3185.9		TRAIL ON MAP CROSSES STREAM
Tributary	3597.5	1	IN ON LEFT; TRIB IS ON MAP, 5TH TRIB ON MAP ON LEFT SIDE OF STREAM
Ford	3641.4		SAME TRAIL CROSSES STREAM
Ford	3751.5		TRAIL CROSSES STREAM AGAIN
Tributary	4251.8		IN ON RIGHT; NOT IDENTIFUIABLE ON MAP
Ford	4274.3		TRAIL ON MAP CROSSES STREAM; END 6/25/03
Side channel	4411.2	1.5	IN ON RIGHT
Side channel	4445.6		OUT ON RIGHT DRY
Tributary	4632.6	0.7	IN ON LEFT; LAST MARKED TRIB ON QUAD MAP



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Long Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary upstream from first tributary on left on Quad map. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Maple Spring Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/10/03
Downstream Starting Point:	Confluence of Maple Spring Run and Gum Run off Forest road 492
Total Distance Surveyed (km):	4.8

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	1657±190	14381±1967
Correction Factor Applied:	1.16	1.30
Number of Paired Samples:	7	7
Total Count:	73	74
Number per km:	15	15
Mean Area (m^2):	23	194
Mean Maximum Depth (cm):	56	39
Mean Average Depth (cm):	40	19
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:	5	--
Percent Surveyed as Runs:	--	1
Percent Surveyed as Cascades:	--	11
Percent with >35% Fines:	34	0

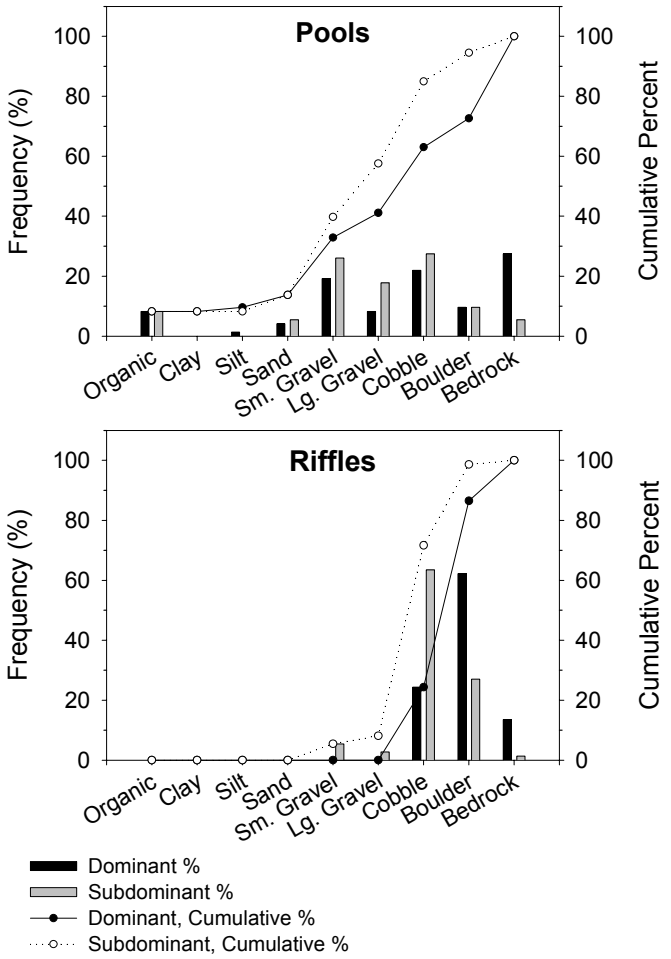
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	121
< 5 m long, > 55 cm diameter:	4
> 5 m long, 10 cm – 55 cm diameter:	48
> 5 m long, > 55 cm diameter:	32
Total:	206

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	12	3
Maximum	15	8
75th Percentile	13	3
25th Percentile	10	1
Minimum	8	1

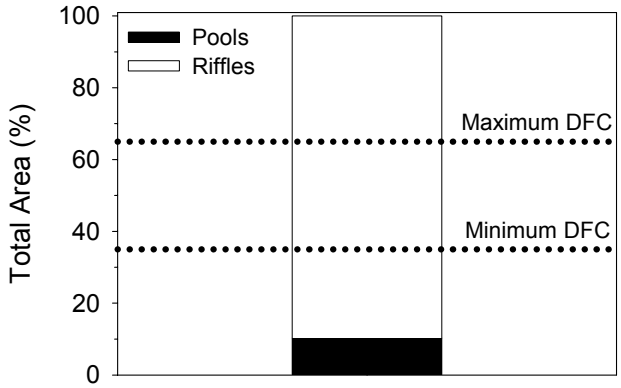
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	7
B:	93
C:	0
D:	0
E:	0
F:	0
G:	0

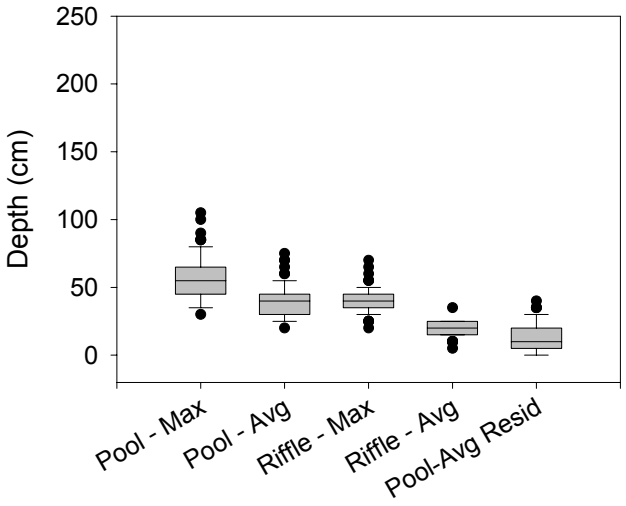
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	9
Median Water Temperature (C):	14



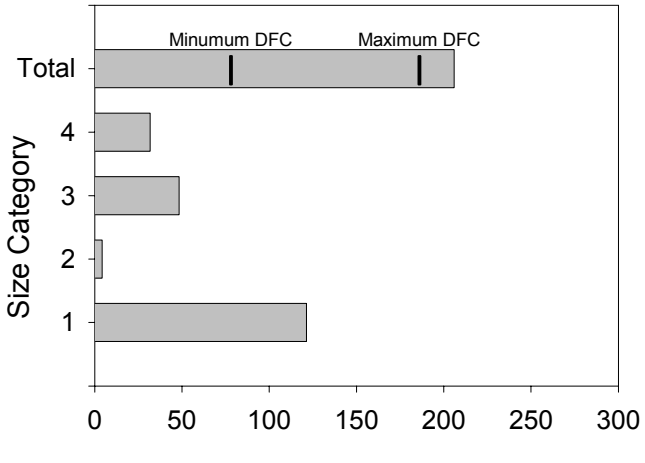
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Maple Spring Run, summer 2003.



Estimated area of Maple Spring Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Maple Spring Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

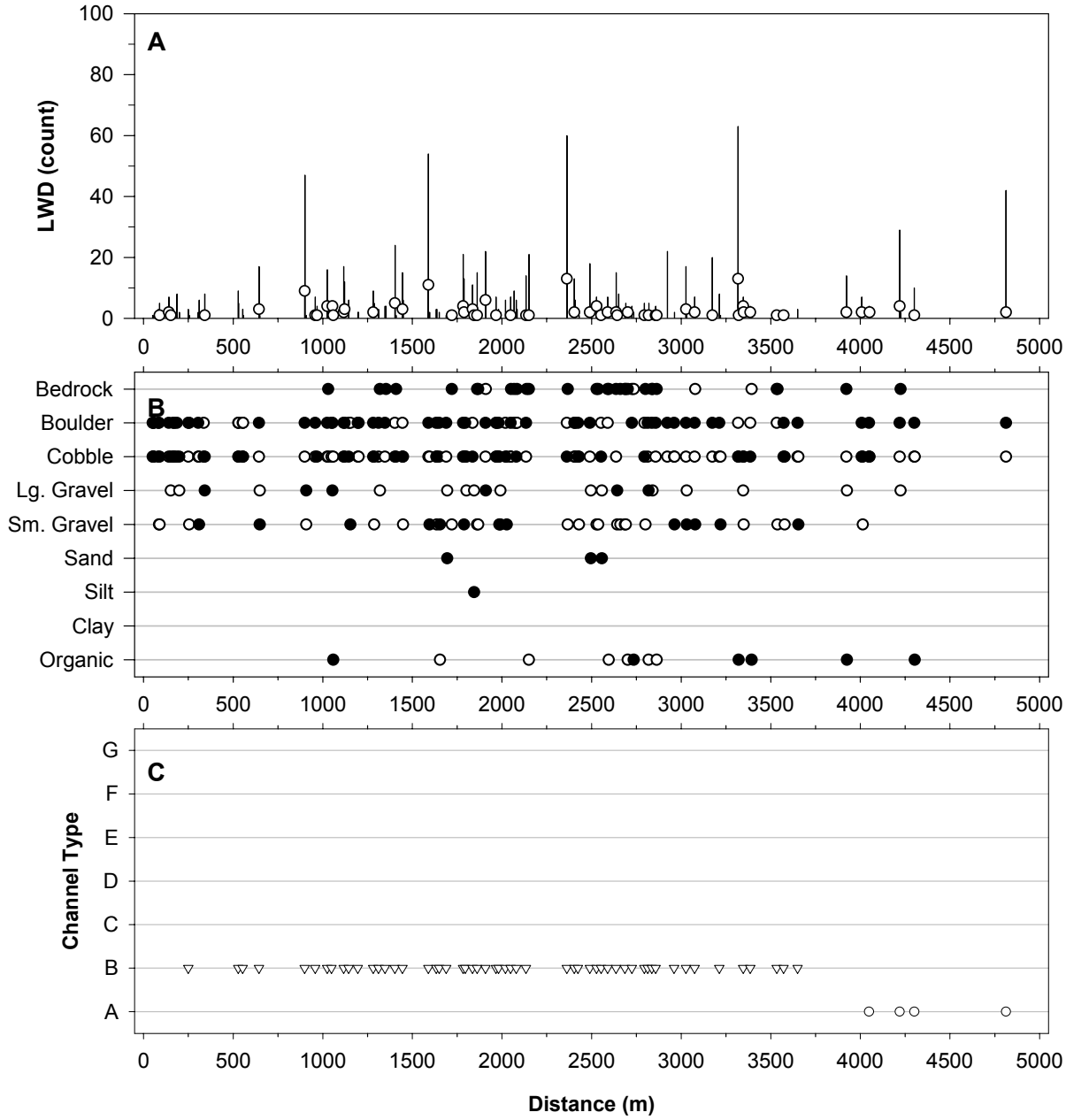


LWD per kilometer in Maple Spring Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Maple Spring Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	174.3	5	FOOT TRAIL, NOT HEAVILY USED; EXTENSION OF FOREST TRAIL
Seep	199.9	1	IN ON LEFT
Side channel	217.8	1.5	IN ON LEFT
Side channel	296.9	1.5	IN ON LEFT; FALLS ABOUT 1.5 METERS INTO MAIN CHANNEL
Side channel	366.5	2	IN ON RIGHT
Side channel	400		OUT ON LEFT
Side channel	500.7	1.5	OUT ON RIGHT
Side channel	554.6	0.5	IN ON RIGHT
Side channel	843.3	1	IN ON LEFT
Tributary	915.1	0.5	TICKLES IN ON RIGHT UNDERGROUND
Side channel	964.8	2	IN ON RIGHT
Side channel	985.5	1	OUT ON RIGHT
Seep	1313.7		IN ON RIGHT
Tributary	2143		IN ON RIGHT DRY
Side channel	2208	1	IN ON RIGHT
Side channel	2281		OUT ON RIGHT UNDERGROUND
Side channel	2292.4	0.7	IN ON LEFT
Side channel	2313.5	1.5	IN ON LEFT
Side channel	2336	2.5	OUT ON LEFT
Tributary	2430.8	0.5	IN ON RIGHT
Side channel	2538.5	0.8	IN ON LEFT
Side channel	2552.5	1.5	OUT ON LEFT
Side channel	2952.6	1.5	IN ON LEFT
Side channel	3280.5	2	IN ON RIGHT
Tributary	3637.2		DRY IN ON LEFT
Tributary	3821.3		DRY TRIB IN ON RIGHT
Tributary	4163.4		DRY IN ON RIGHT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Maple Spring Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence with Gum Run off of Forest road 492. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Miller Spring Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	06/25/03
Downstream Starting Point:	FS boundary about 200 meters downstream of the ford on Forest road 596
Total Distance Surveyed (km):	2.8

	Pools	**Riffles**
Percent of Total Stream Area:	23	77
Total Area (m^2):	2463±239	8229±1087
Correction Factor Applied:	1.07	1.33
Number of Paired Samples:	9	8
Total Count:	88	79
Number per km:	31	28
Mean Area (m^2):	28	104
Mean Maximum Depth (cm):	46	29
Mean Average Depth (cm):	29	14
Mean Residual Depth (cm):	10	--
Percent Surveyed as Glides:	24	--
Percent Surveyed as Runs:	--	1
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	65	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	106
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	88
> 5 m long, > 55 cm diameter:	10
Total:	205

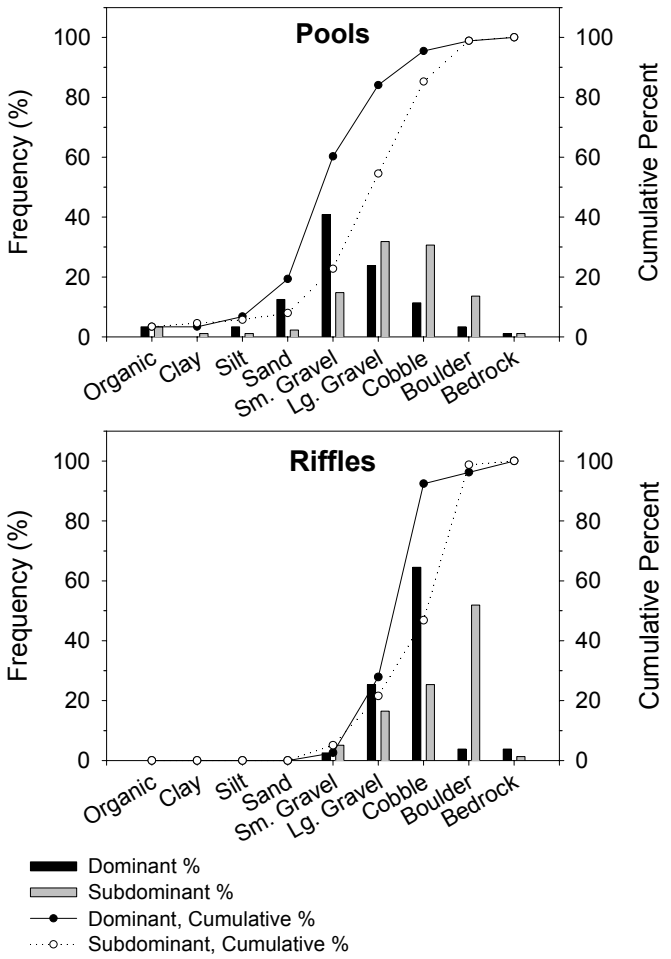
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	2
Maximum	16	9
75^{th} Percentile	11	2
25^{th} Percentile	9	1
Minimum	7	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

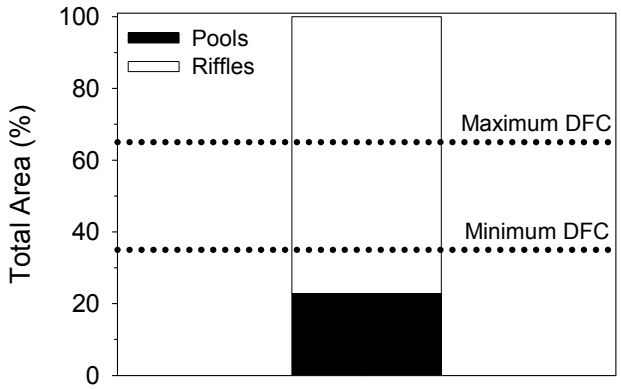
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	15
C:	0
D:	0
E:	0
F:	85
G:	0

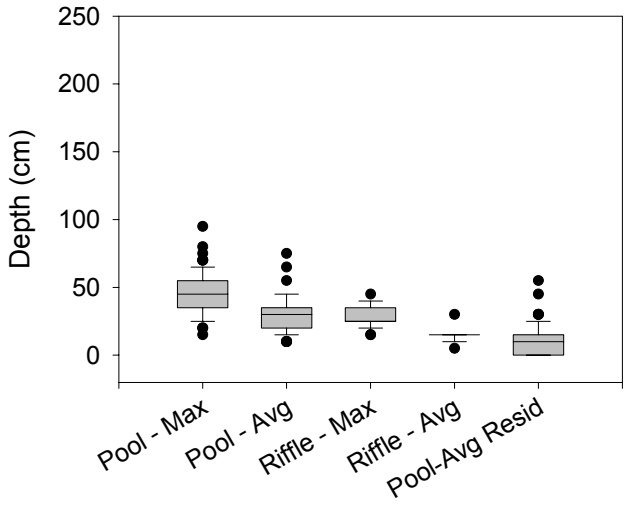
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	6
Median Water Temperature (C):	13



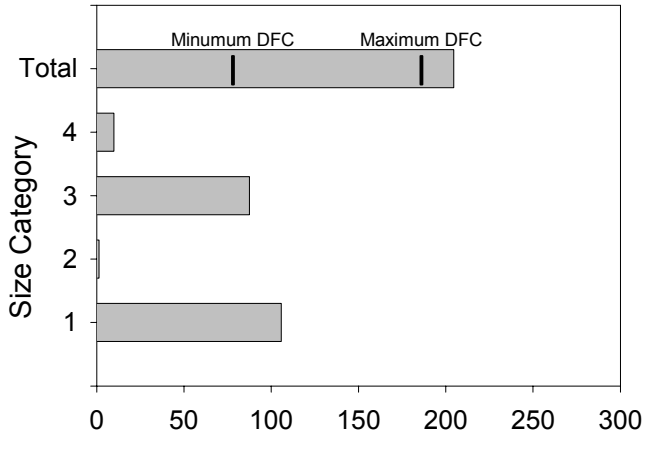
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Miller Spring Run, summer 2003.



Estimated area of Miller Spring Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Miller Spring Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

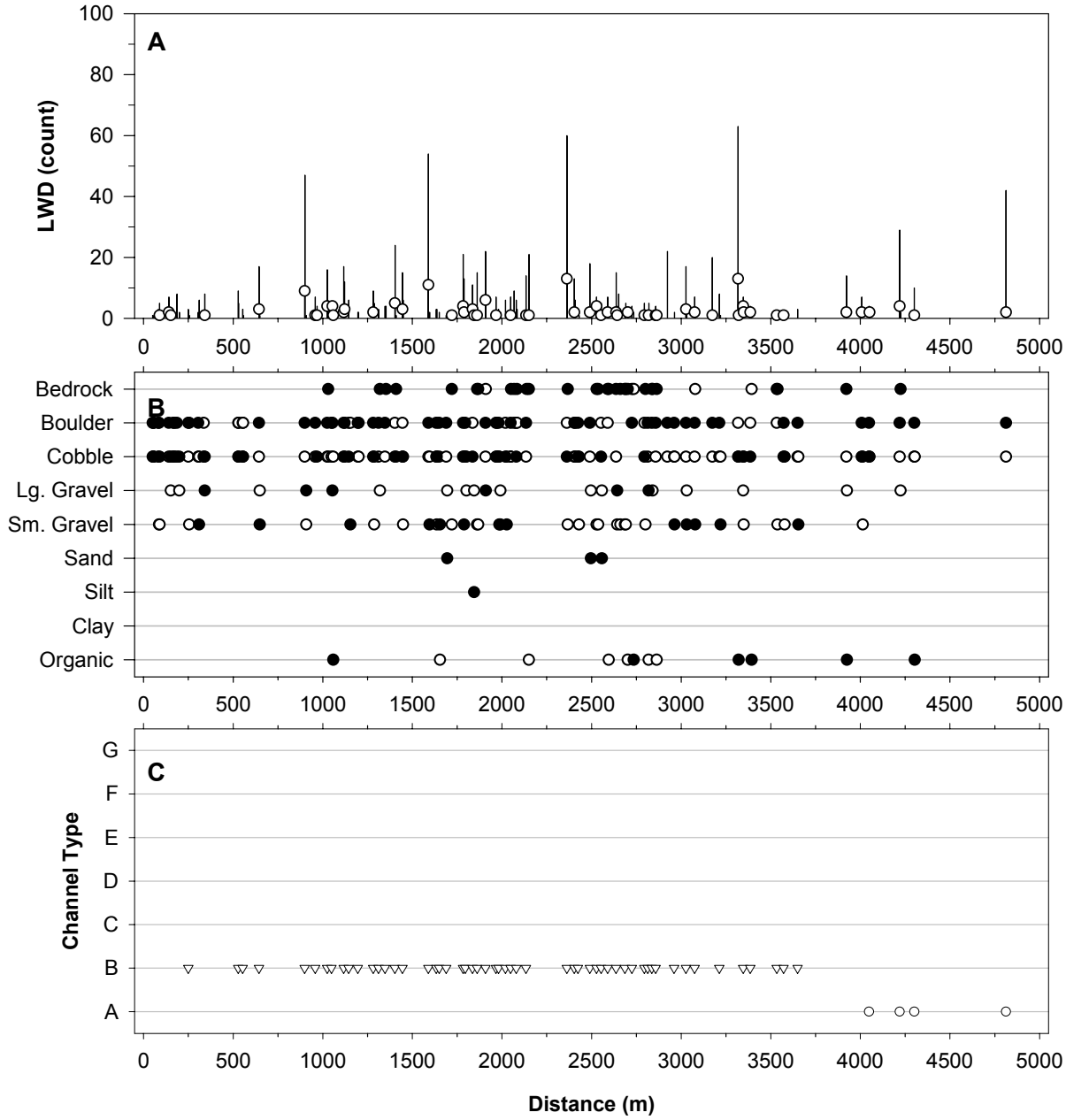


LWD per kilometer in Miller Spring Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Miller Spring Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	0	1.2	IN RIGHT, STARTED AT 1030
Tributary	26.4	1.5	IN LEFT
Tributary	51.4	3	OUT LEFT
Tributary	103.7	2	IN RIGHT
Tributary	160.2	1.5	IN LEFT
Tributary	177.4	1.2	OUT RIGHT, FIRST SIE CHANNEL OF BEGINNING OF SURVEY
Tributary	208.5	0.8	IN RIGHT, RIGHT AT FORD
Ford	244.7	6	ROAD CROSSING, USFS ROAD 596
Tributary	507.6	1	IN RIGHT
Tributary	524.4	1.5	OUT RIGHT
Tributary	594.2	1.8	IN LEFT
Tributary	624	1.5	OUT LEFT, SIDE CHANNEL HAS A HUGE POOL
Tributary	750.6	1.2	IN RIGHT
Seep	764.6	0.8	LEFT
Tributary	818.1	1.2	IN RIGHT
Tributary	843.9	1.5	OUT RIGHT
Braid	931.7	20	3 CHANNELS
Seep	1183.3	0.1	
Tributary	1207.4	1	RIGHT
SLID	1268.4		15 METERS HIGH AND ON THE LEFT SIDE
Ford	1315.5		UNNAMED ROAD OR TRAIL, CAMPSITE ON RIGHT
Tributary	1473.9	1	RIGHT, LOW FLOW
Seep	1530	0.2	LEFT, MAYBE A SIDE CHANNEL
Tributary	1803.9	1.5	IN RIGHT
Tributary	1935.5	0.8	RIGH
Tributary	2214.3	1	LEFT
Tributary	2537.1	1	RIGHT
Braid	2643.1	2	WENT UP RIGHT CHANNEL OF BRAID AND BASIN IS ABOUT 40 METERS WIDE
Tributary	2742.1	0.5	LEFT
Seep	2807.3	0.5	RIGHT
Seep	2807.3	0.5	RIGHT
Seep	2810.3	0.5	RIGHT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Miller Spring Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary 200 meters downstream from Forest road 596. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Payne Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	7/25/2002
Downstream Starting Point:	FS Boundary
Total Distance Surveyed (km):	0.5

Stream features found on Payne Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	**Distance (m)**	**Width (m)**	**Comments**
Underground	500		Dry from 0.0 m to 500.0 m, No water in streambed

Stream:	**Peach Run**
District:	Dry River Ranger
USGS Quadrangle:	Rawley Springs
Survey Date:	07/25/02
Downstream Starting Point:	USFS Boundary
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	26	74
Total Area (m^2):	23±**	65±**
Correction Factor Applied:	1.05	1.40
Number of Paired Samples:	1	1
Total Count:	5	6
Number per km:	10	12
Mean Area (m^2):	5	11
Mean Maximum Depth (cm):	28	10
Mean Average Depth (cm):	16	6
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	--*	--*

**could not calculate
*data not collected in 2002

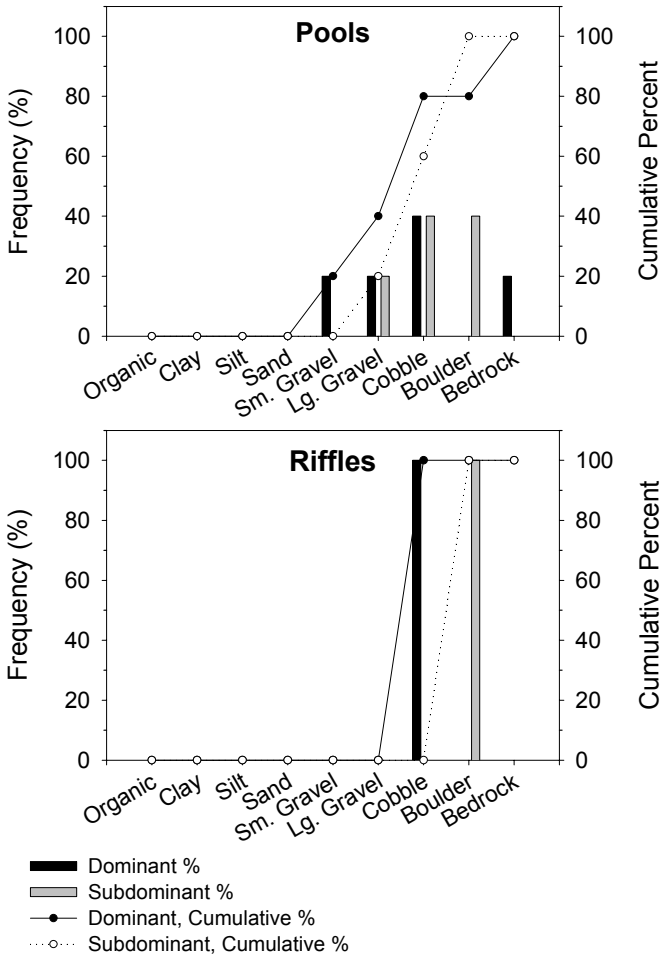
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	10
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	2
> 5 m long, > 55 cm diameter:	0
Total:	12

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	2
Maximum	11	4
75th Percentile	11	3
25th Percentile	11	2
Minimum	11	1

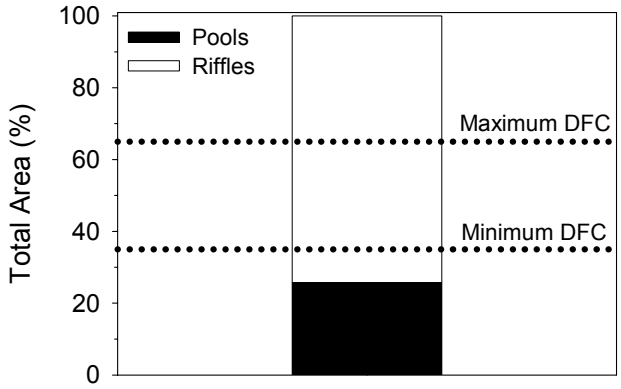
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

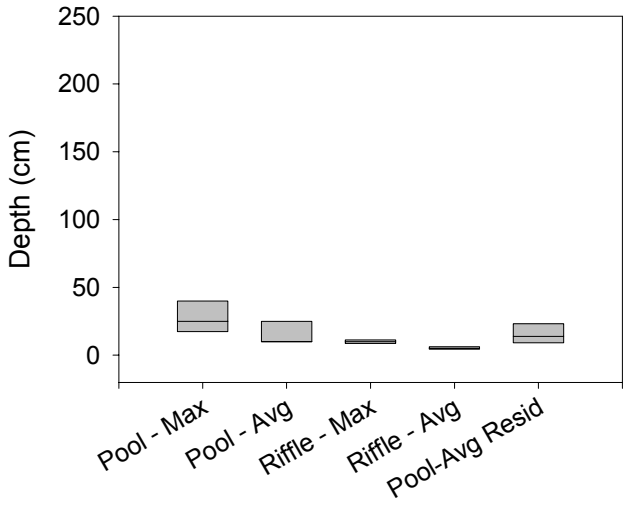
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	5
Median Water Temperature (C):	18



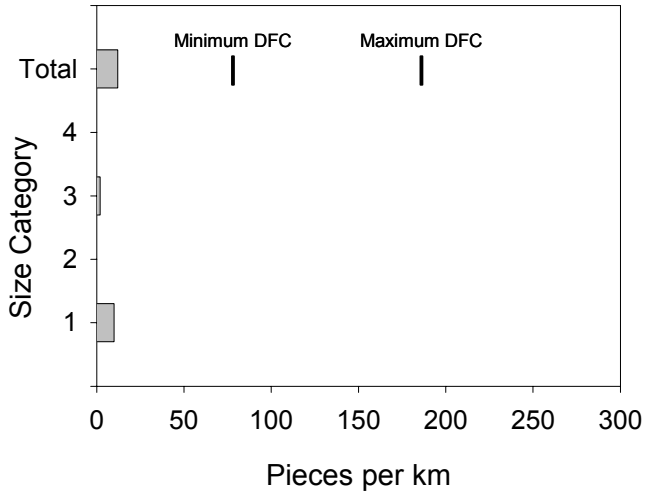
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Peach Run, summer 2002.



Estimated area of Peach Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Peach Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

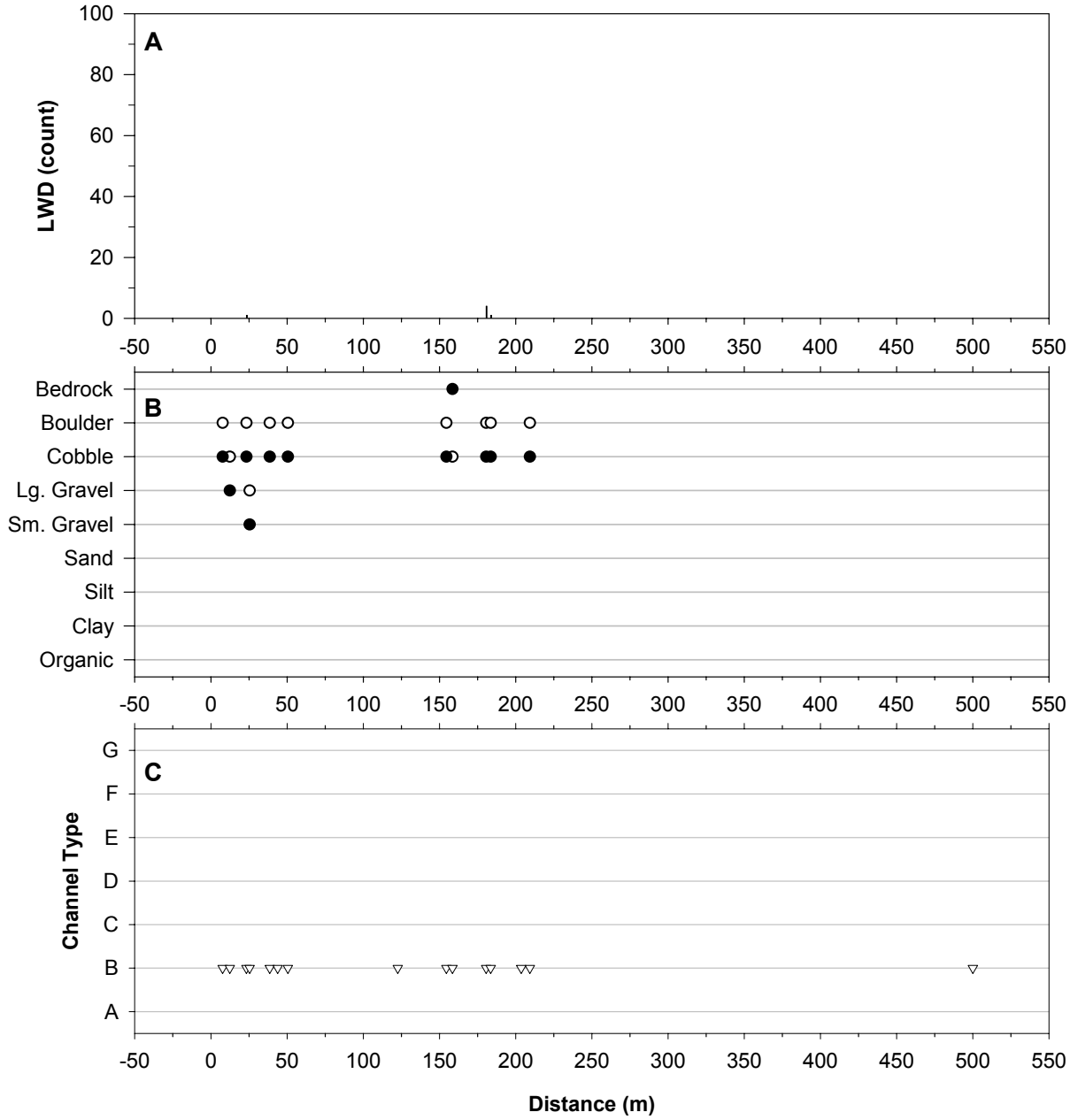


LWD per kilometer in Peach Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Peach Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	43.8		from 38.6 m to 43.8 m
Underground	122.6		from 50.5 m to 122.6 m
Underground	203.6		from 183.6 m to 203.6 m
Underground	500		from 209.3 m to 500.0 m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Peach Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Raccoon Run**
District:	Dry River Ranger
USGS Quadrangle:	Rawley Springs
Survey Date:	07/25/02
Downstream Starting Point:	Confluence with unknown stream
Total Distance Surveyed (km):	1.5

	Pools	**Riffles**
Percent of Total Stream Area:	36	64
Total Area (m^2):	672±29	1201±262
Correction Factor Applied:	0.89	0.92
Number of Paired Samples:	7	5
Total Count:	63	60
Number per km:	42	40
Mean Area (m^2):	11	20
Mean Maximum Depth (cm):	29	15
Mean Average Depth (cm):	17	7
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:	8	--
Percent Surveyed as Runs:	--	12
Percent Surveyed as Cascades:	--	5
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	164
< 5 m long, > 55 cm diameter:	4
> 5 m long, 10 cm – 55 cm diameter:	80
> 5 m long, > 55 cm diameter:	3
Total:	250

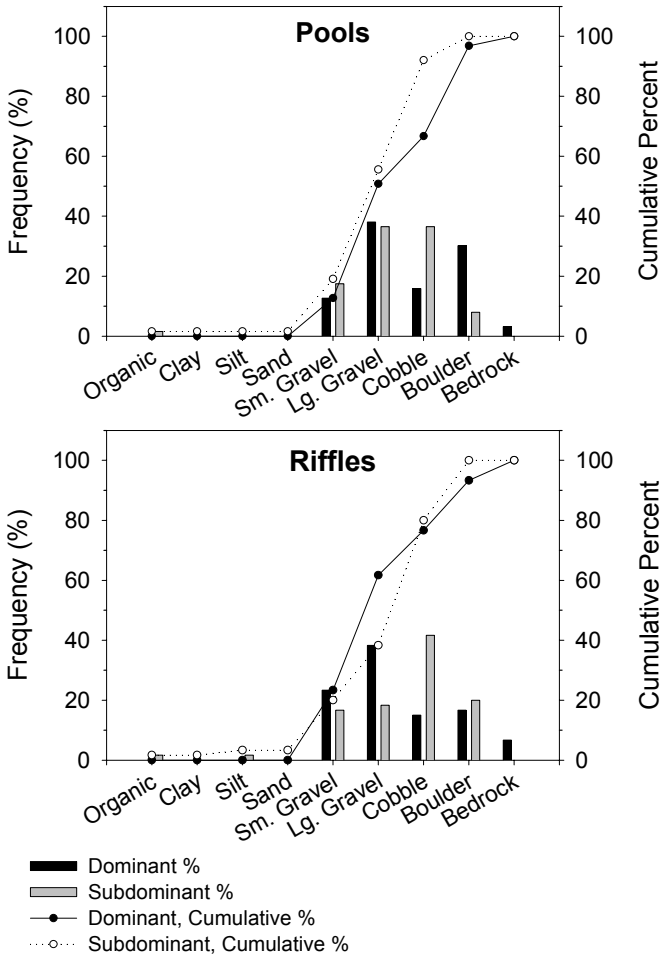
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	3
Maximum	14	9
75th Percentile	12	3
25th Percentile	9	1
Minimum	9	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

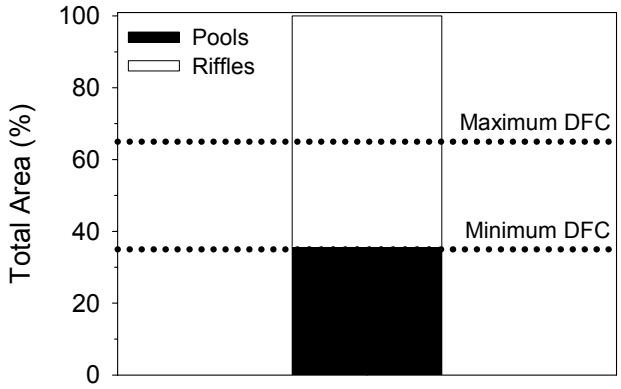
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

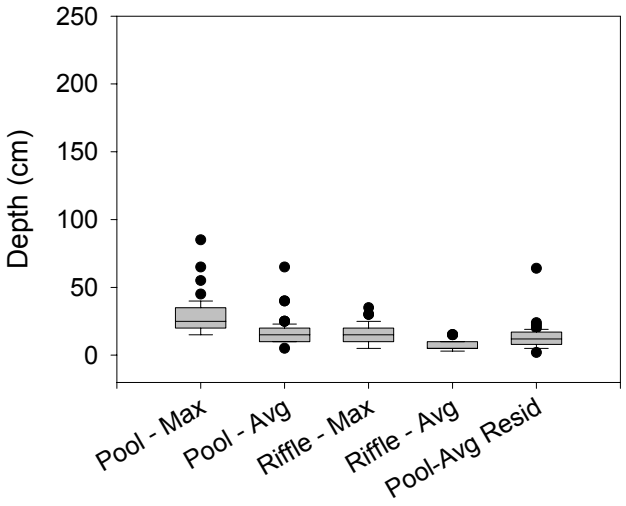
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	13
Median Water Temperature (C):	Not Recorded



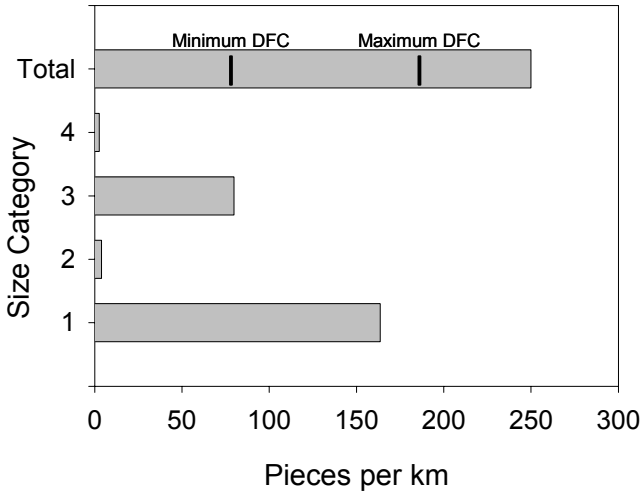
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Racoon Run, summer 2002.



Estimated area of Racoon Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Racoon Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

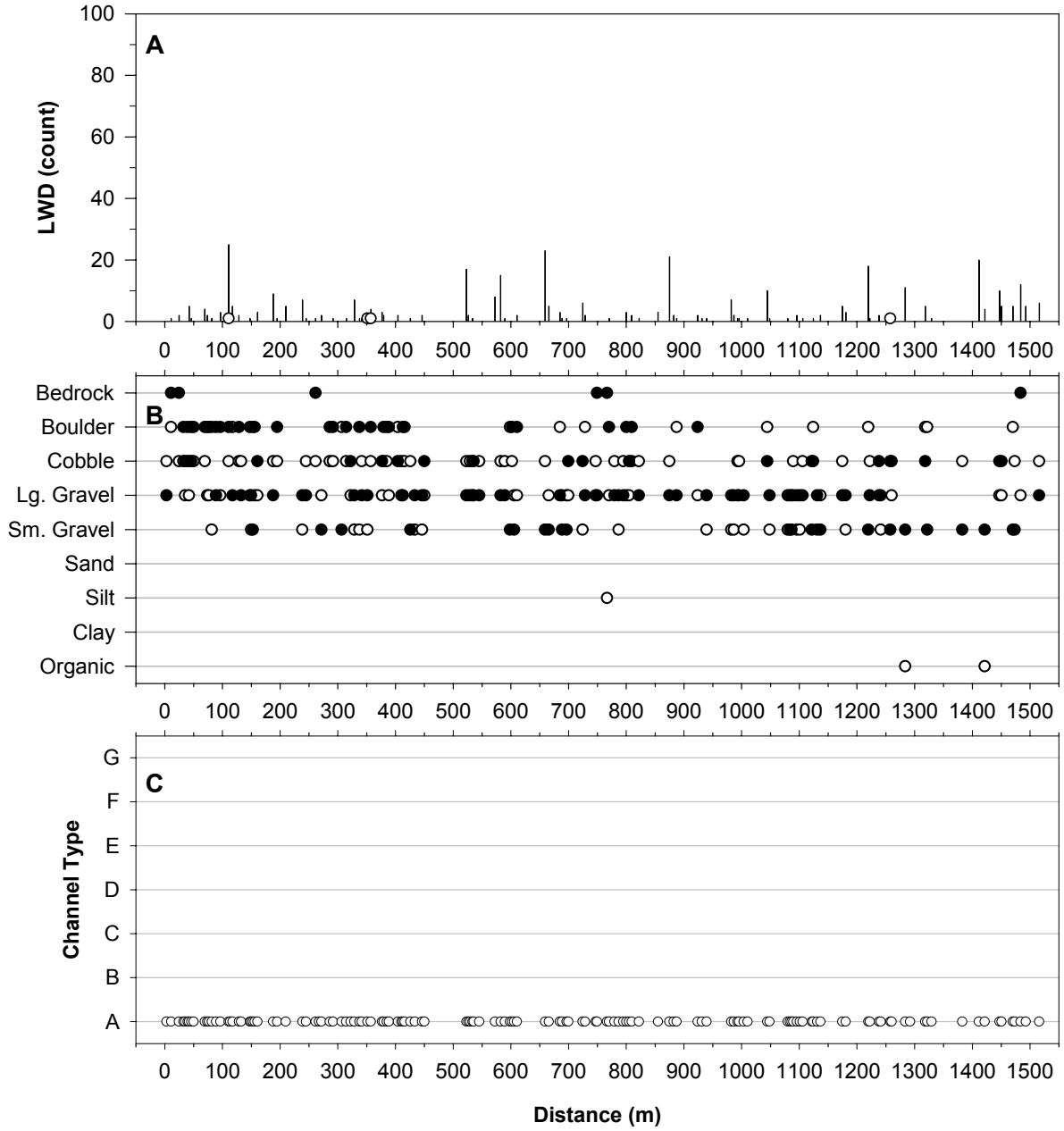


LWD per kilometer in Racoon Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Racoon Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	113		from 110.7 m to 113.0 m
Underground	209.7		from 194.6 m to 209.7 m
Trail Crossing	264.1		
Underground	267.1		from 261.3 m to 267.1 m
Side Channel	315		In on left
Tributary	332.6		on right, dry
Side Channel	343.5		Out on left
Seep	410.1		on right, dry
Underground	526		from 522.8 m to 526.0 m
Tributary	552.2		on left, dry
Underground	572.3		from 545.0 m to 572.3 m
Side Channel	821.9	0.5	In on left
Side Channel	847.7	0	Out on left, dry
Underground	854.8		from 821.9 m to 854.8 m
Side Channel	871.1	0.8	In on right
Underground	882.1		from 874.6 m to 882.1m
Side Channel	930.9		Out on right, dry
Underground	930.9		from 923.7 m to 930.9 m
Underground	1010.1		from 1003.5 m to 1010.1 m
Side Channel	1147.1	1	In on right
Side Channel	1155	0.5	Out on right
Side Channel	1254.4	0.5	Inon right
Side Channel	1265.7		Out On right
Side Channel	1270.6		In on left,dry
Side Channel	1279.2		Out on left
Underground	1292.1		From 1283.4 m to 1292.1 m
Side Channel	1311.5		In on left, dry
Underground	1329		from 1321.7 m to 1329.0 m
Side Channel	1331.7		Out on left, dry
Side Channel	1382.4		In on right, dry
Side Channel	1403.6		Out on right
Underground	1411.3		From 1382.4 m to 1411.3 m
Underground	1492.4		From 1483.6 m to 1492.4 m
Side Channel	1556.3		In on right and left
Side Channel	1575		Out on right
Side Channel	1580.8		Out on left
Side Channel	1612		In on right, dry
Side Channel	1633.4		Out on right



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Racoon Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence with unnamed tributary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Rocky Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	07/22/02
Downstream Starting Point:	USFS Boundary off FS road 546
Total Distance Surveyed (km):	2.9

	Pools	**Riffles**
Percent of Total Stream Area:	40	60
Total Area (m^2):	923±63	1388±137
Correction Factor Applied:	0.93	1.17
Number of Paired Samples:	6	5
Total Count:	56	52
Number per km:	19	18
Mean Area (m^2):	16	27
Mean Maximum Depth (cm):	38	15
Mean Average Depth (cm):	20	6
Mean Residual Depth (cm):	9	--
Percent Surveyed as Glides:	13	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	33
< 5 m long, > 55 cm diameter:	6
> 5 m long, 10 cm – 55 cm diameter:	33
> 5 m long, > 55 cm diameter:	15
Total:	87

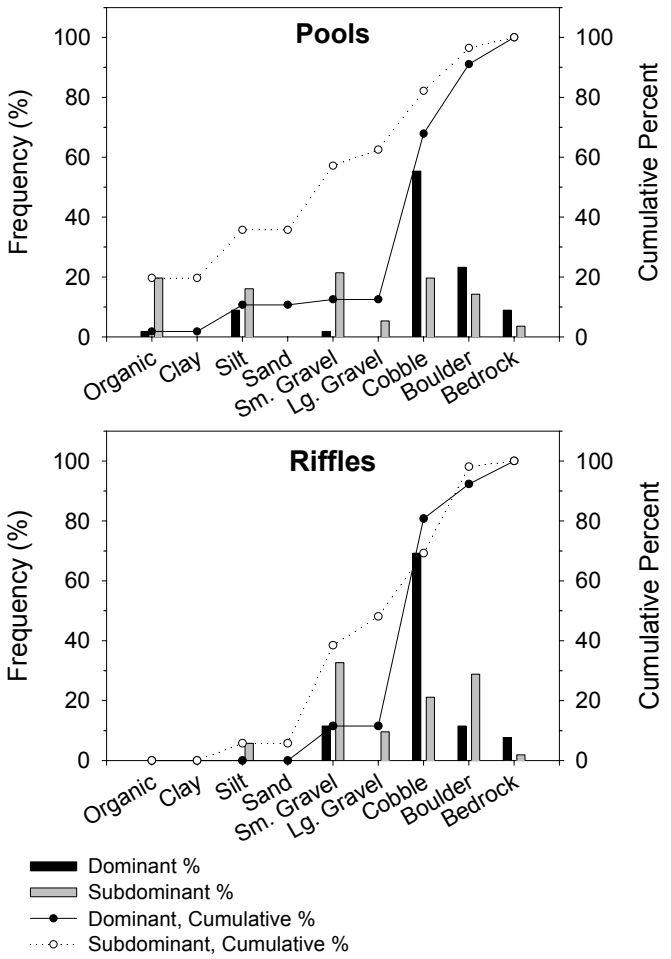
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	18	6
Maximum	33	14
75th Percentile	17	7
25th Percentile	12	3
Minimum	11	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

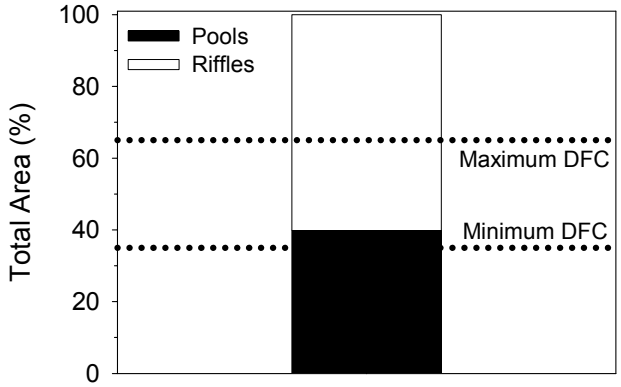
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	33
B:	67
C:	0
D:	0
E:	0
F:	0
G:	0

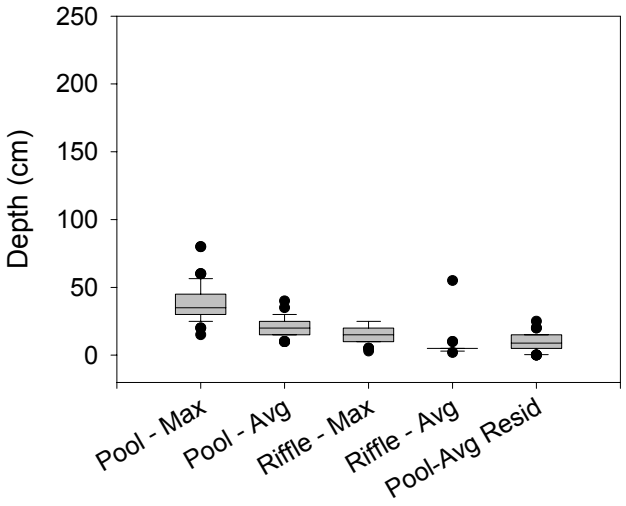
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	6
Median Water Temperature (C):	16



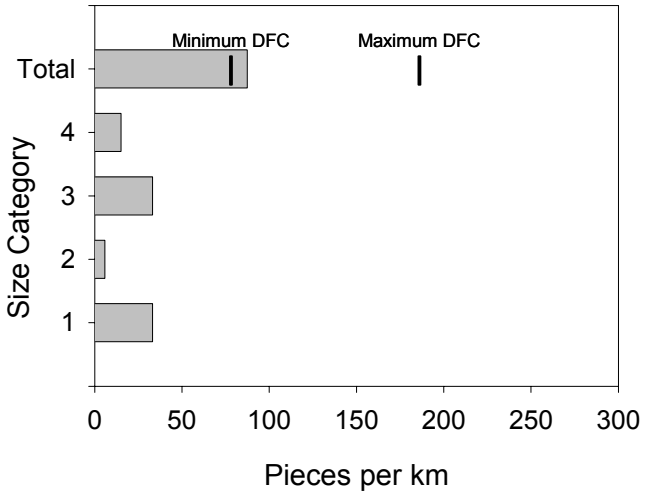
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Rocky Run, summer 2002.



Estimated area of Rocky Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Rocky Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

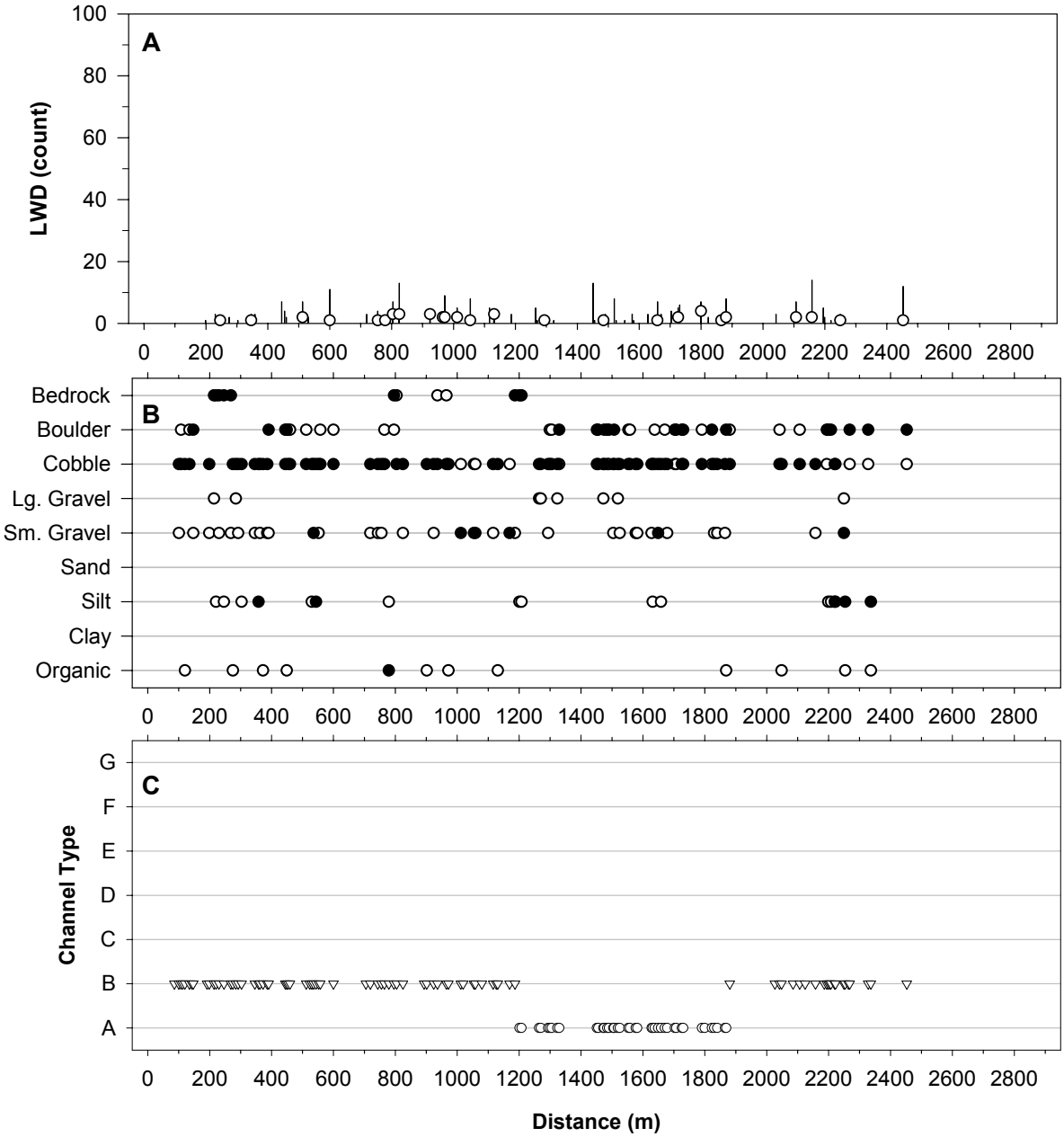


LWD per kilometer in Rocky Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Rocky Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	86.2		from 0.0 m to 86.2 m
Underground	113.0		from 107.9 m to 113.0 m
Underground	142.6		from 134.6 m to 142.6 m
Underground	191.6		from 147.0 m to 191.6 m
Underground	523.5		from 512.0 m to 523.5 m
Tributary	573.0		on left
Underground	705.0		from 600.0 m to 705.0 m
Underground	893.3		from 824.6 m to 893.3 m
Side Channel In	1005.9		on left
Underground	1019.3		from 1011.6 m to 1019.3 m
Underground	1079.8		from 1058.9 m to 1079.8
Side Channel Out	1079.8		on left
Underground	1126.2		from 1116.1 m to 1126.2 m
Tributary	1423.8		on right
Underground	1799.6		from 1790.7 m to 1799.6 m
Underground	2026.9		from 1880.5 m to 2026.9 m
Underground	2085.3		from 2048.0 m to 2085.3
Tributary	2106.5		on right
Underground	2124.4		from 2106.5 m to 2124.4 m
Underground	2186.0		from 2157.9 m to 2186.0 m
Underground	2203.8		from 2199.0 m to 2203.8 m
Underground	2264.4		from 2253.9 m to 2264.4 m
Underground	2917.3		from 2452.5 m to 2917.3, ended stream at the confluence of two unnamed tributaries



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Rocky Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Sand Run**
District:	Dry River
USGS Quadrangle:	Rawley Springs
Survey Date:	07/24/02
Downstream Starting Point:	USFS Boundary off FS road/trail 596
Total Distance Surveyed (km):	2.6

	Pools	**Riffles**
Percent of Total Stream Area:	26	74
Total Area (m^2):	694±134	1939±340
Correction Factor Applied:	0.98	0.99
Number of Paired Samples:	5	5
Total Count:	52	52
Number per km:	20	20
Mean Area (m^2):	13	37
Mean Maximum Depth (cm):	35	13
Mean Average Depth (cm):	19	5
Mean Residual Depth (cm):	8	--
Percent Surveyed as Glides:	10	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	6
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	13
< 5 m long, > 55 cm diameter:	9
> 5 m long, 10 cm – 55 cm diameter:	2
> 5 m long, > 55 cm diameter:	3
Total:	26

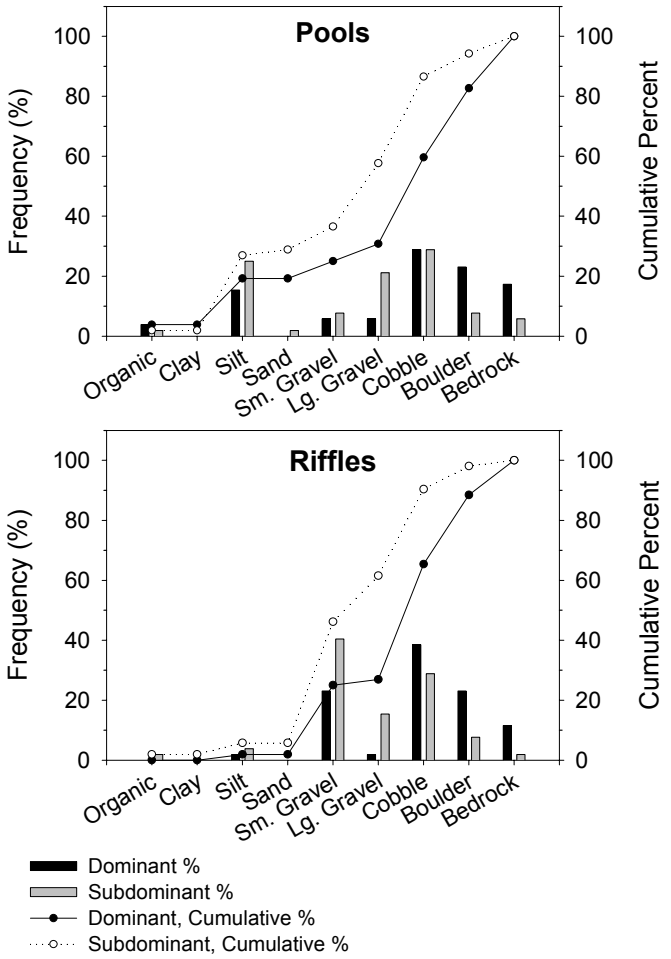
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	3
Maximum	14	7
75th Percentile	13	4
25th Percentile	10	2
Minimum	8	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

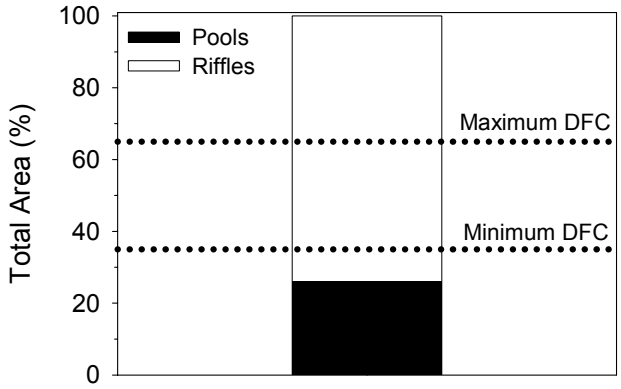
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	0
C:	0
D:	0
E:	0
F:	100
G:	0

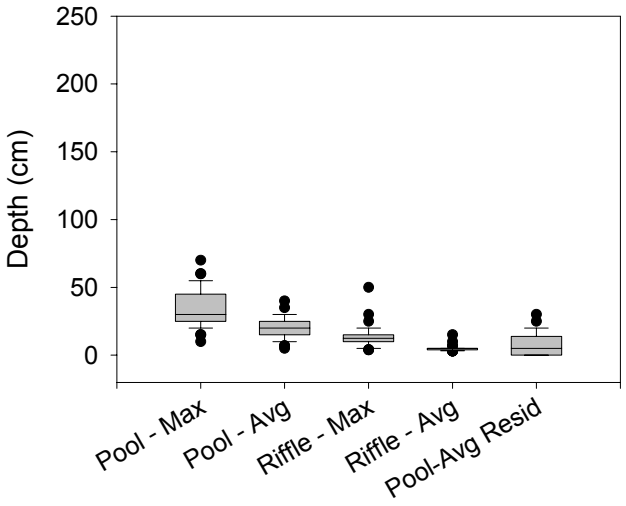
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	5
Median Water Temperature (C):	Not recorded



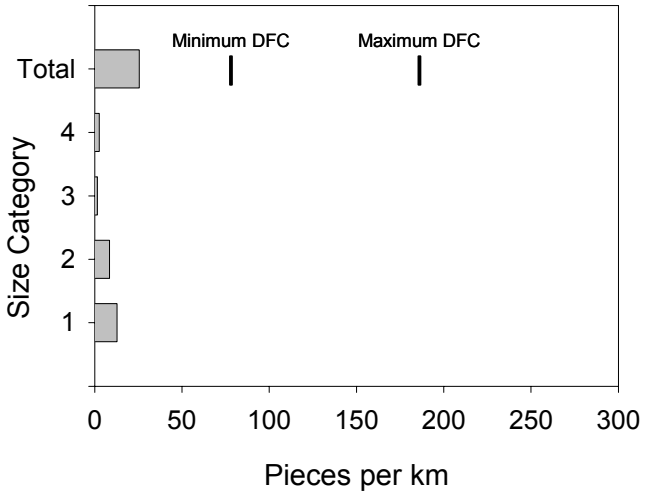
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Sand Run, summer 2002.



Estimated area of Sand Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Sand Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

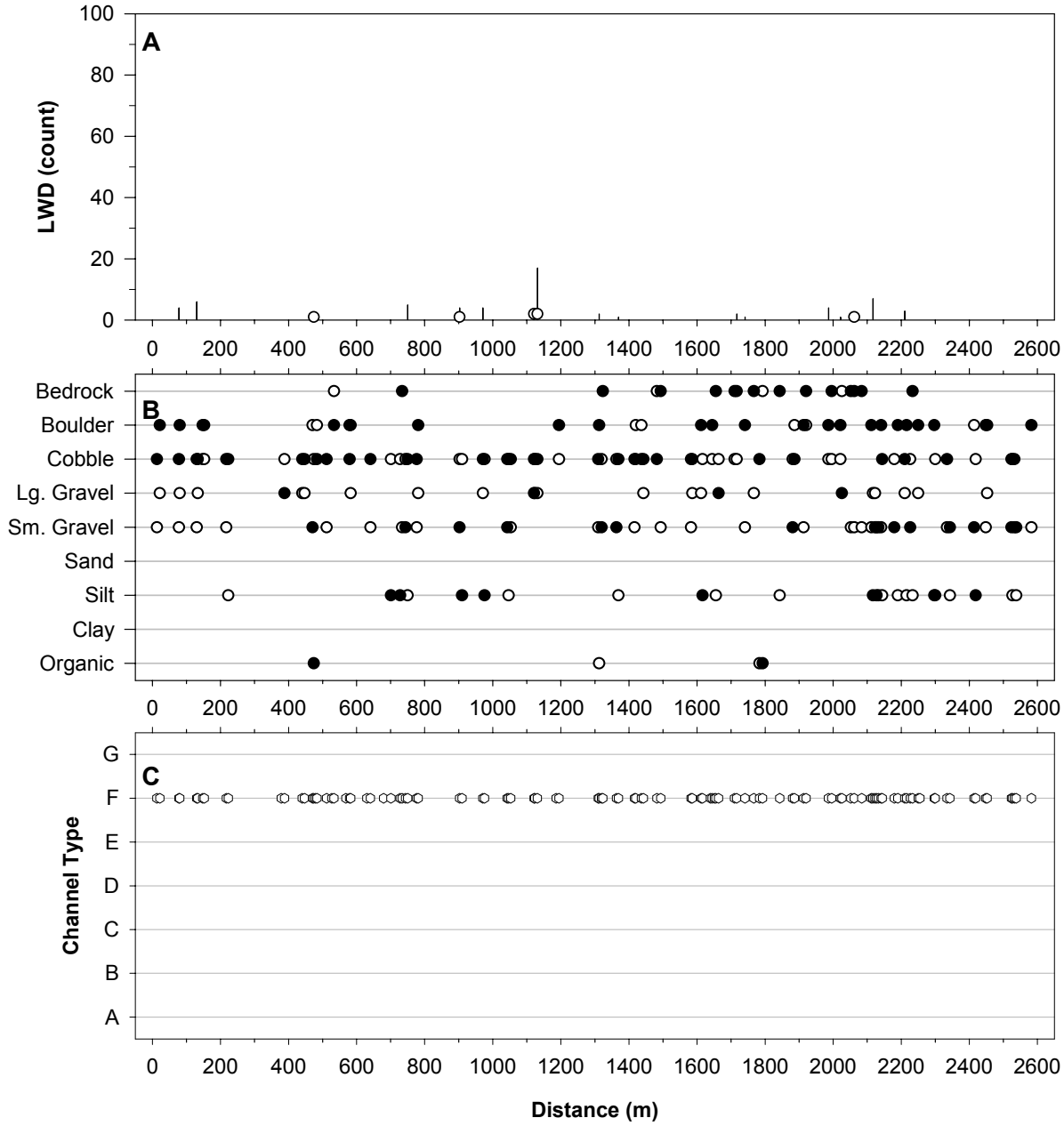


LWD per kilometer in Sand Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

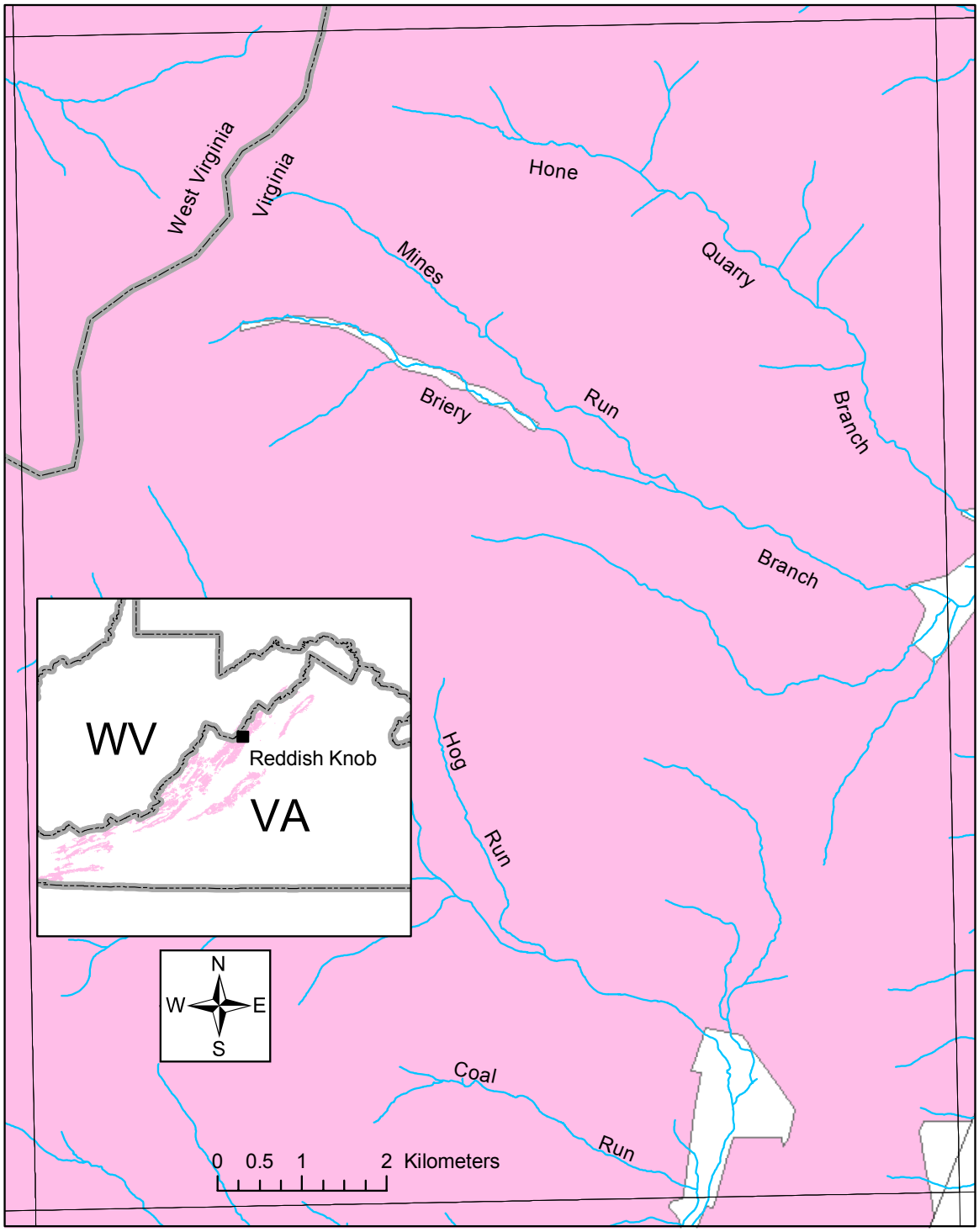
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Sand Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	99.5		on right
Underground	378.8		from 222.9 m to 378.8 m
Underground	478.9		from 474.0 m to 478.9 m
Underground	527.2		from 511.9 m to 527.2 m
Underground	568.4		from 533.5 m to 568.4 m
Trail Crossing	597.0		
Underground	630.0		from 582.5 m to 630.0 m
Underground	679.4		from 640.7 m to 679.4 m
Tributary	743.7		on right
Underground	1186.0		from 1131.2 m to 1186.0 m
Underground	1639.3		from 1616.0 m to 1639.3 m
Underground	1651.3		from 1644.3 m to 1651.3 m
Trail Crossing	1995.3		
Trail Crossing	2180.0		
Tributary	2489.9		on left



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Sand Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).



Streams inventoried on the Reddish Knob Quadrangle using BVET habitat surveys during summer 2003.

Stream:	**Briery Branch (lower)**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	07/15/03
Downstream Starting Point:	FS boundary on route 924 below Briery Branch Lake.
Total Distance Surveyed (km):	3.1

	Pools	**Riffles**
Percent of Total Stream Area:	43	57
Total Area (m^2):	7474±3613	9756±2552
Correction Factor Applied:	1.34	1.24
Number of Paired Samples:	6	5
Total Count:	68	52
Number per km:	22	17
Mean Area (m^2):	110	188
Mean Maximum Depth (cm):	53	35
Mean Average Depth (cm):	28	16
Mean Residual Depth (cm):	12	--
Percent Surveyed as Glides:	51	--
Percent Surveyed as Runs:	--	4
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	6	0

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	115
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	63
> 5 m long, > 55 cm diameter:	1
Total:	179

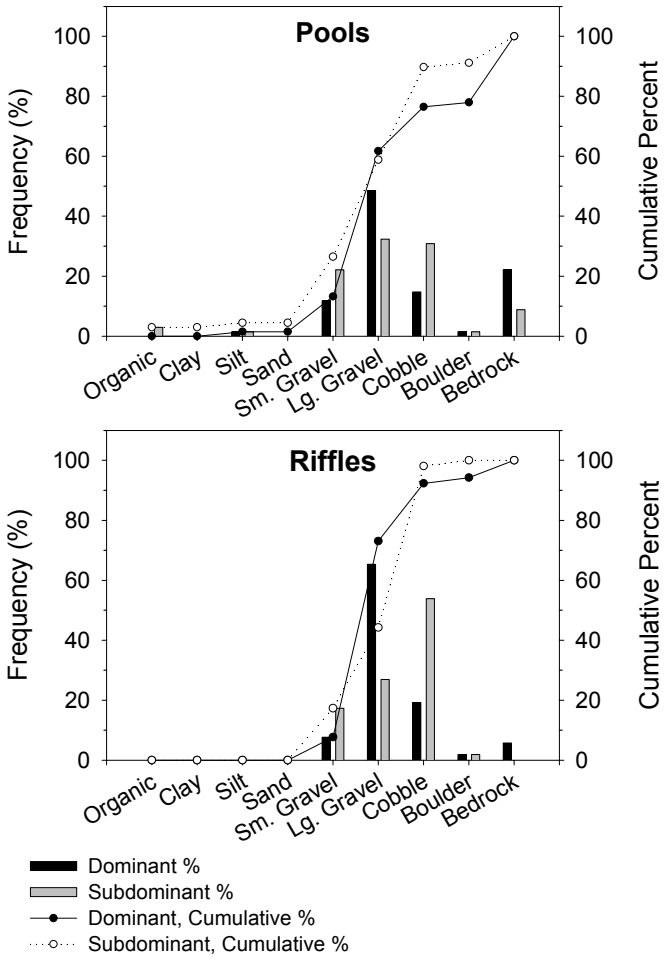
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	18	5
Maximum	40	28
75th Percentile	22	4
25th Percentile	10	1
Minimum	9	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

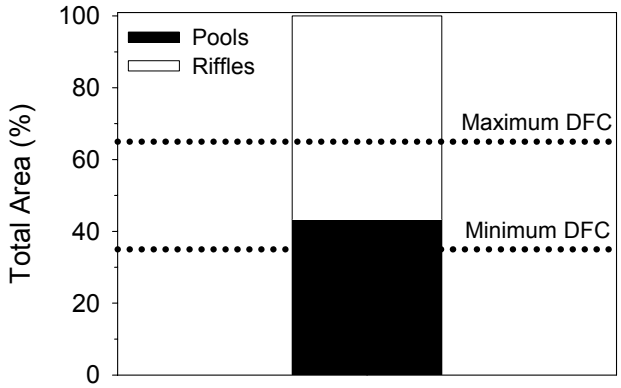
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	68
C:	0
D:	0
E:	0
F:	32
G:	0

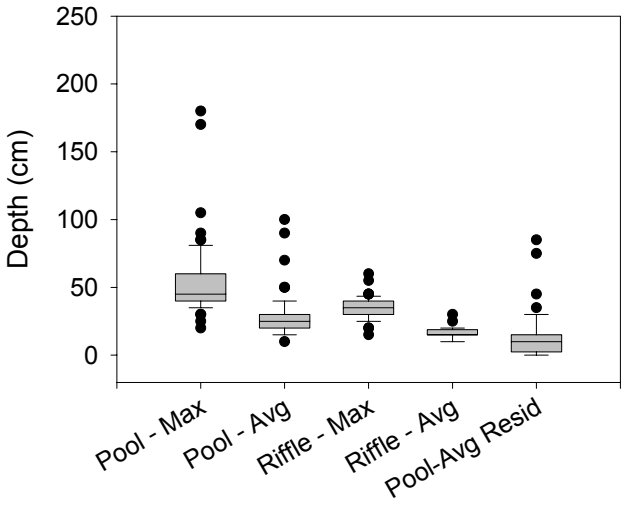
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	3
Median Water Temperature (C):	21.5



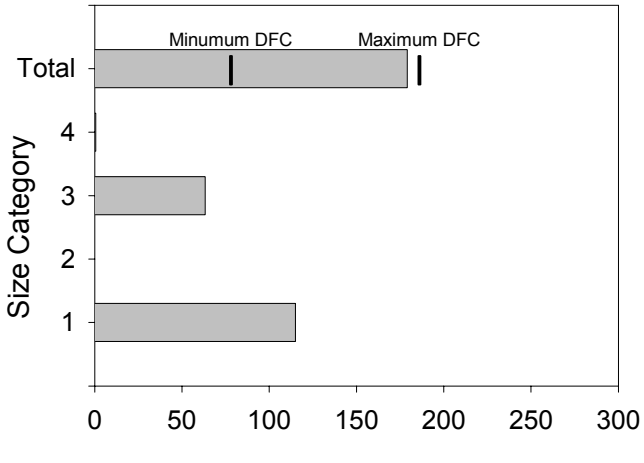
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Briery Branch (lower), summer 2003.



Estimated area of Briery Branch (lower) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Briery Branch (lower), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

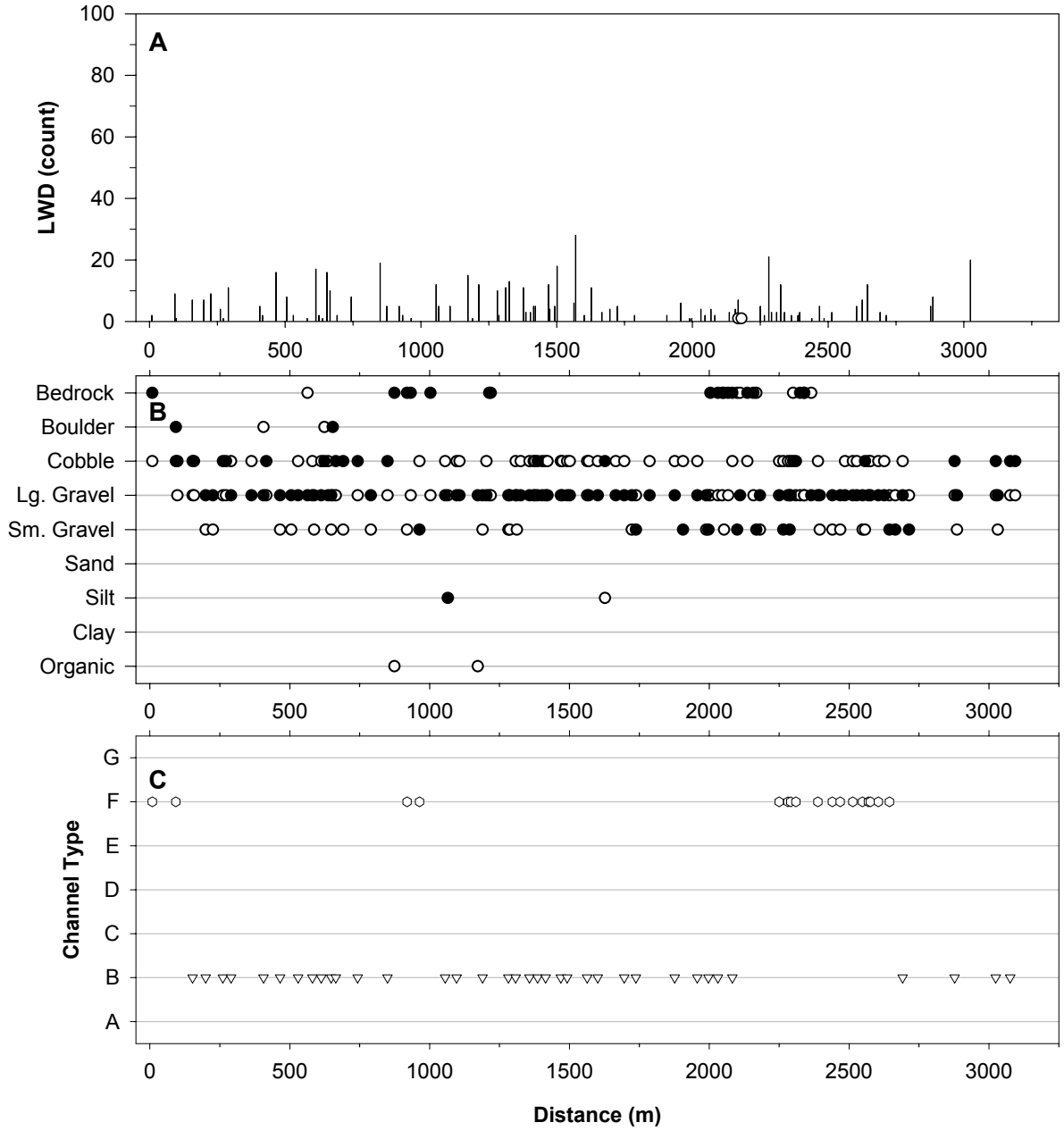


LWD per kilometer in Briery Branch (lower), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Briery Branch (lower) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	108.2	1	IN ON RIGHT
Side channel	376.4	1	IN ON LEFT
Side channel	574.1	0.5	IN ON RIGHT
Ford	742.9		3METERS WIDE TANKS TRAPS ON BOTH SIDES NO VEHICLE TRAFFIC
Side channel	796.5	1.5	IN ON LEFT
Side channel	1020	1.5	IN ON RIGHT
Side channel	1106.9	2.5	OUT ON LEFT MUCH LARGER LOOKIN THAN WHEN I ENTERS
Seep	1434.8		TRICKLES IN ON LEFT FROM STEEP BANK
Side channel	1486	0.8	IN ON RIGHT
Side channel	1671.1	2.2	IN ON LEFT
Side channel	1687.7		OUT ON LEFT
Seep	2167.2		GOOD FLOW IN ON RIGHT
Side channel	2486	0.3	IN ON LEFT
Side channel	2950	0.5	IN ON LEFT SMALL FLOW



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Briery Branch (lower), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary on route 924 below Briery Branch Lake. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Briery Branch (upper)**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	07/16/03
Downstream Starting Point:	Where Briery Branch flows into Briery Branch Lake
Total Distance Surveyed (km):	1.8

	Pools	**Riffles**
Percent of Total Stream Area:	9	91
Total Area (m^2):	679±196	6968±2449
Correction Factor Applied:	1.03	1.37
Number of Paired Samples:	3	2
Total Count:	27	24
Number per km:	15	13
Mean Area (m^2):	25	290
Mean Maximum Depth (cm):	46	31
Mean Average Depth (cm):	24	13
Mean Residual Depth (cm):	10	--
Percent Surveyed as Glides:	33	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	4	0

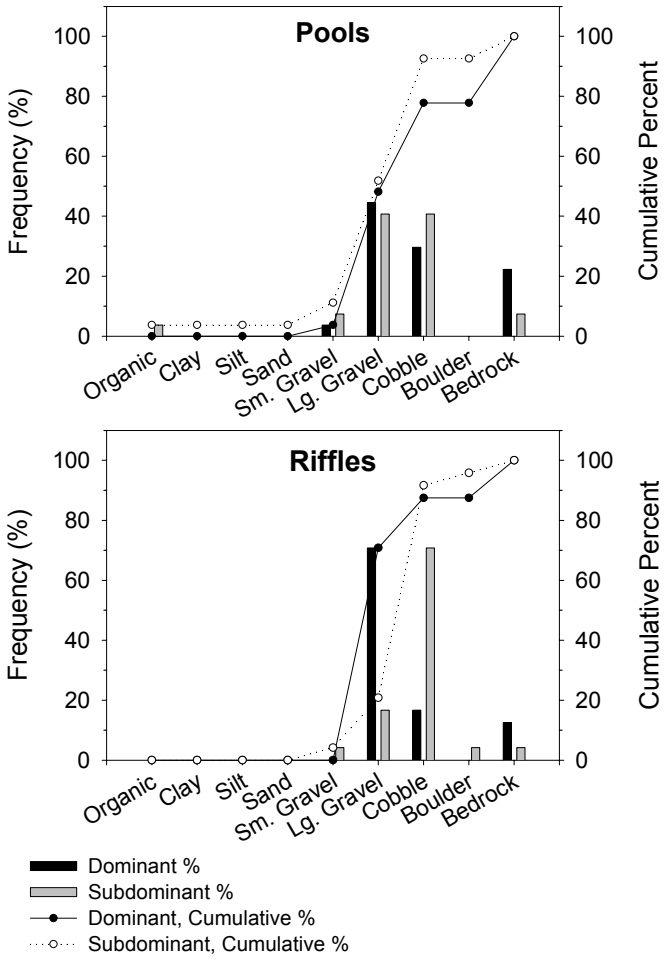
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	84
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	72
> 5 m long, > 55 cm diameter:	3
Total:	159

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	9	1
Maximum	9	1
75^{th} Percentile	9	1
25^{th} Percentile	9	0
Minimum	9	0

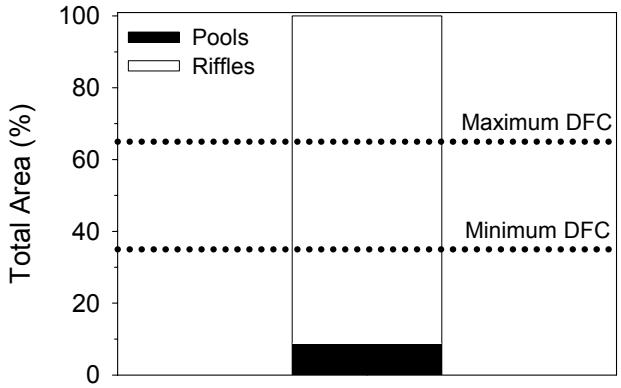
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	33
C:	0
D:	0
E:	0
F:	67
G:	0

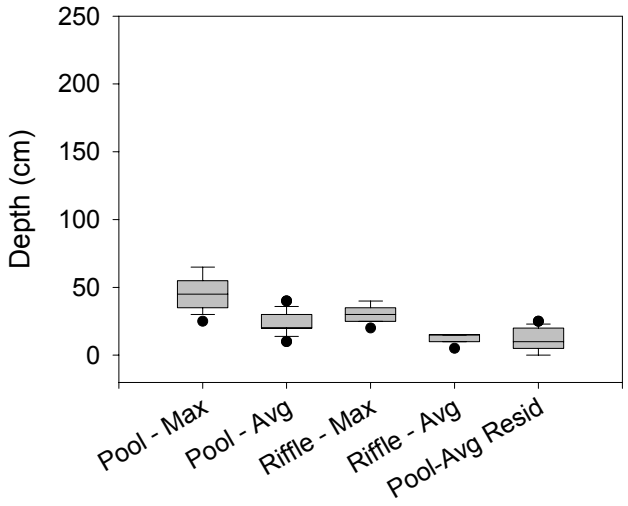
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	4
Median Water Temperature (C):	18



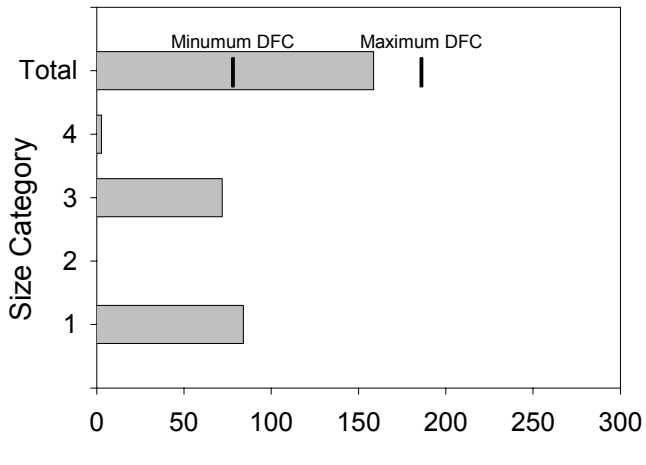
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Briery Branch (upper), summer 2003.



Estimated area of Briery Branch (upper) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Briery Branch (upper), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

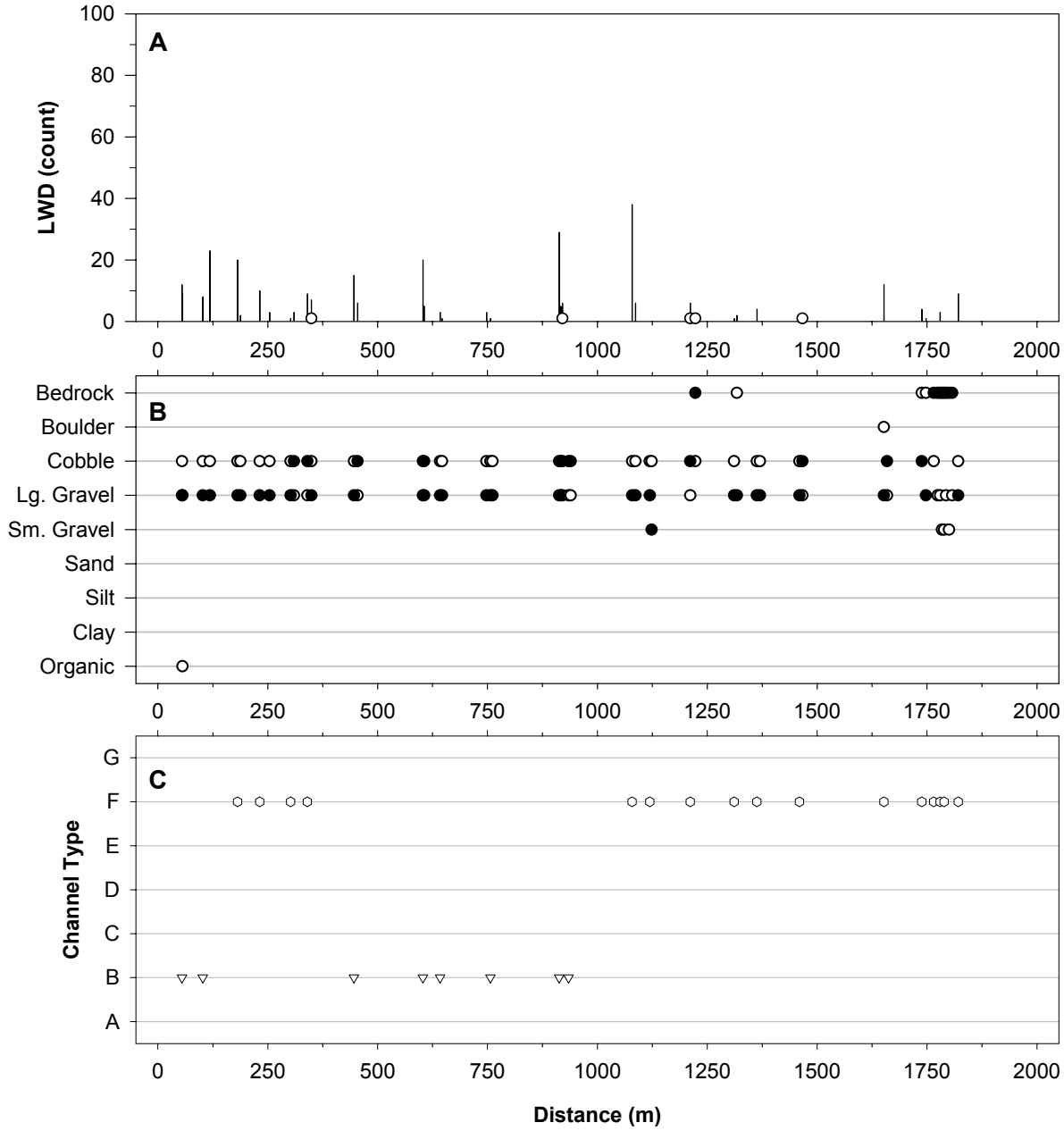


LWD per kilometer in Briery Branch (upper), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Briery Branch (upper) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	0	250	NO EVIDENT CHANNEL COMING FROM LEFT SIDE OF LAKE, FOLLOWED SOUND OF RUNNING WATER TO A CHANNEL, ACTUAL CHANNEL IS ABOUT 200 METERS FROM WHERE SHOWN ON MAP, IT APPEARS THAT MINES AND BRIERY BRANCH CONJOIN FOR A SHORT PERIOD BEFORE BREAKING INTO SEPARATE CH
Side channel	55.9	3	BRIERY BRANCH APPEARS TO SPLIT AND FEED MINESS RUN VERY ODD
Side channel	357.8	4.5	IN ON LEFT VERY LITTLE WATER BUT WIDE
Other	491.5		ROAD LEADS UP TO STREAM BUT DOES NOT CROSS, APPEARS USED
Side channel	584.8	3	IN ON LEFT
Side channel	627	0.8	IN ON RIGHT
Side channel	777.9		OUT ON RIGHT UNDERGROUND
Ford	983.3	3	VEHICLE ROAD APPEARS WELL USED
Side channel	997.6	2	IN ON LEFT APPEARS THAT AREA IS HEAVILY USED LOTS OF TRASH
Side channel	1032.9	1.5	IN ON RIGHT, RUNS ALONG BLUFF
Side channel	1057.7		OUT ON LEFT UNDER SMALL BRUSHPILE
Tributary	1709.8	0.3	IN ON LEFT MODERATE FLOW FOR SIZE
Tributary	1812.6		IN ON RIGHT DRY
Side channel	3385.5		OUT ON LEFT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Briery Branch (upper), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from point where Briery Branch flows into Briery Branch Lake. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Coal Run**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	08/05/03
Downstream Starting Point:	FS boundary approximately 200 meters West of 101
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	42	58
Total Area (m^2):	674±350	937±348
Correction Factor Applied:	1.05	1.10
Number of Paired Samples:	4	4
Total Count:	43	40
Number per km:	42	39
Mean Area (m^2):	16	23
Mean Maximum Depth (cm):	38	12
Mean Average Depth (cm):	22	6
Mean Residual Depth (cm):	11	--
Percent Surveyed as Glides:	30	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	5
Percent with >35% Fines:	12	0

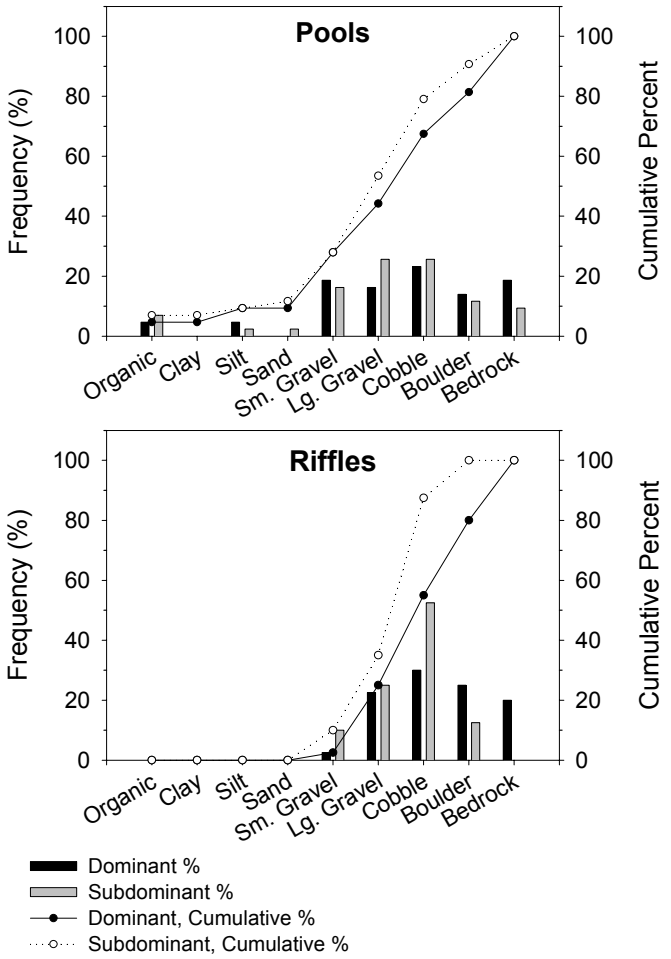
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	128
< 5 m long, > 55 cm diameter:	3
> 5 m long, 10 cm – 55 cm diameter:	116
> 5 m long, > 55 cm diameter:	6
Total:	253

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	11	3
Maximum	15	8
75th Percentile	13	6
25th Percentile	11	1
Minimum	7	1

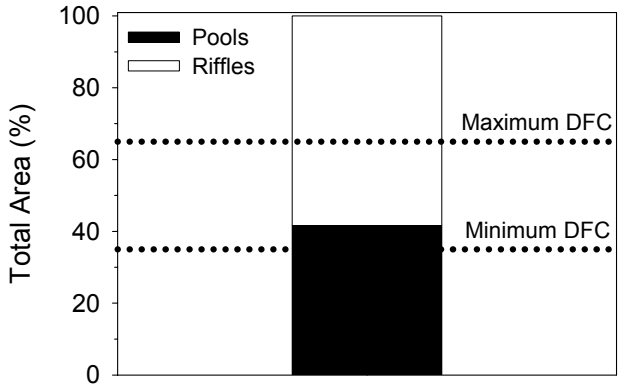
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	13
B:	0
C:	0
D:	0
E:	0
F:	88
G:	0

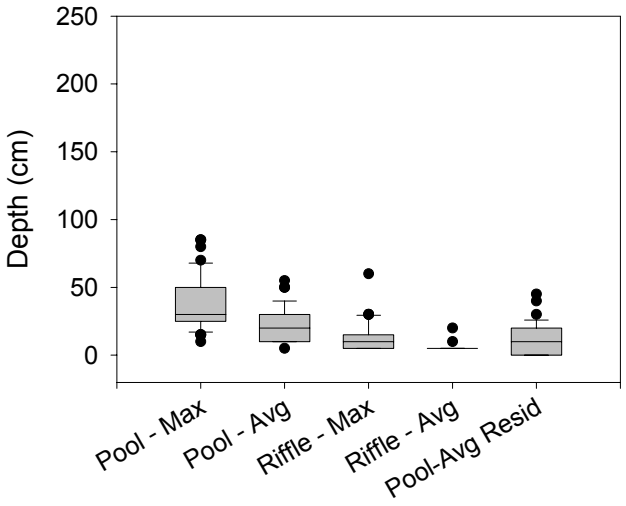
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	9
Median Water Temperature (C):	18



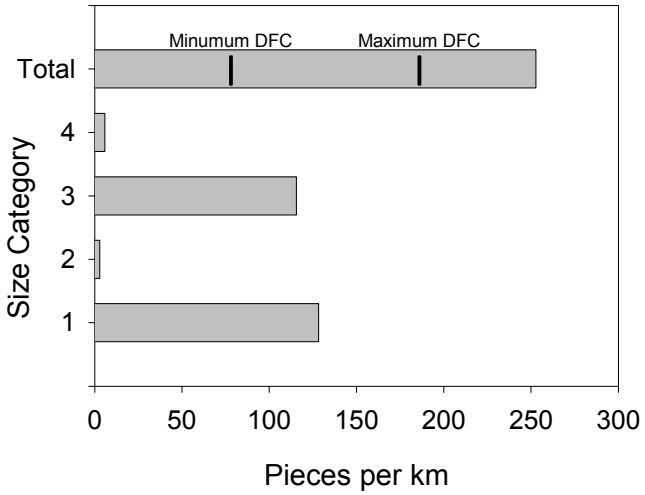
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Coal Run, summer 2003.



Estimated area of Coal Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Coal Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

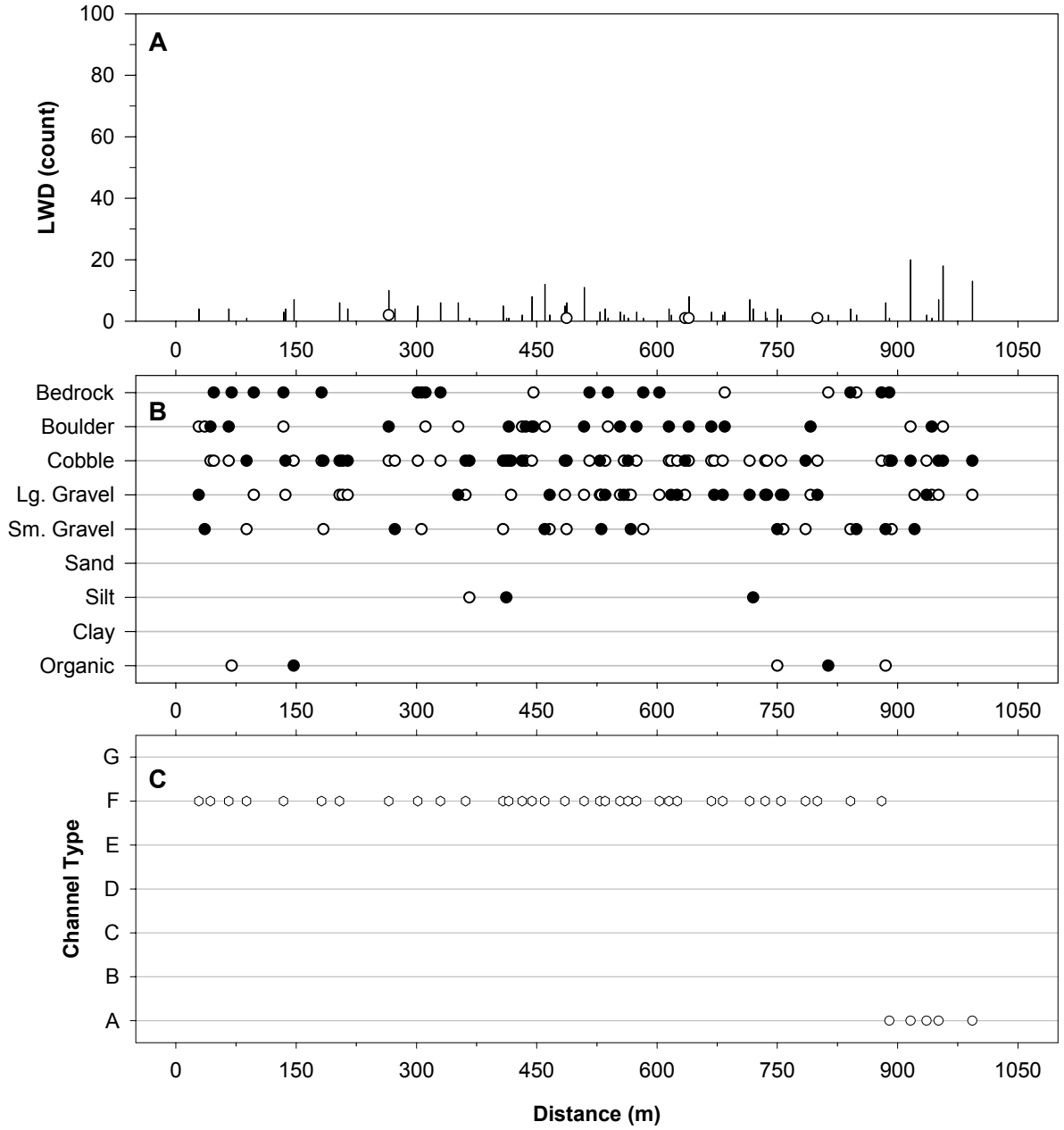


LWD per kilometer in Coal Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Coal Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	301.6	0.3	IN ON LEFT
Ford	366		VERY OLD CROSSING , STREAM BANKS AT CROSSING ARE ENTRENCHED ATLEAST 4 FEET



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Coal Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest boundary 200 meters West of route 101. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hogpen Run**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	8/5/2003
Downstream Starting Point:	
Total Distance Surveyed (km):	1.0

Stream features found on Hogpen Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	**Distance (m)**	**Width (m)**	**Comments**
Underground	1000		Dry for 1 km

Stream:	**Hone Quarry (lower)**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	07/15/03
Downstream Starting Point:	FS boundary off Forest road 62
Total Distance Surveyed (km):	3.5

	Pools	**Riffles**
Percent of Total Stream Area:	28	72
Total Area (m^2):	4306±160	11318±9383
Correction Factor Applied:	0.97	1.08
Number of Paired Samples:	4	4
Total Count:	48	49
Number per km:	14	14
Mean Area (m^2):	90	231
Mean Maximum Depth (cm):	64	29
Mean Average Depth (cm):	41	18
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	13	--
Percent Surveyed as Runs:	--	8
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	31	4

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	20
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	15
> 5 m long, > 55 cm diameter:	4
Total:	39

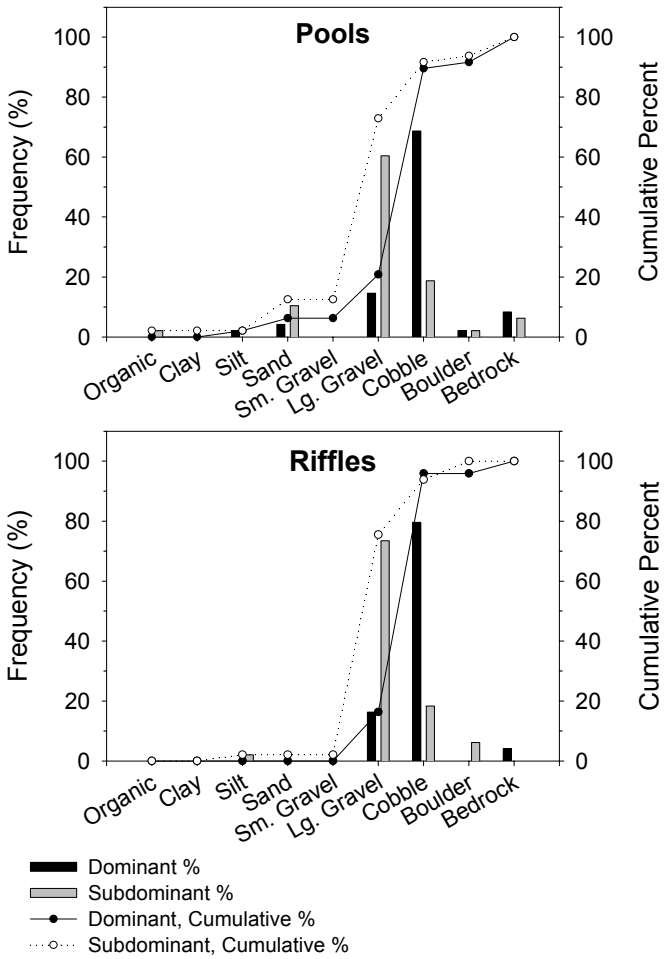
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	19	3
Maximum	24	13
75^{th} Percentile	20	3
25^{th} Percentile	16	1
Minimum	15	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

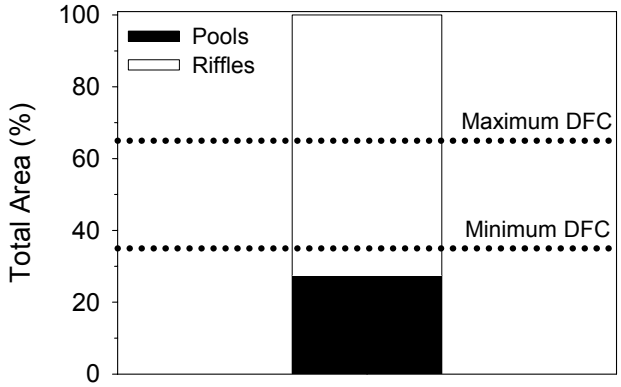
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	98
C:	2
D:	0
E:	0
F:	0
G:	0

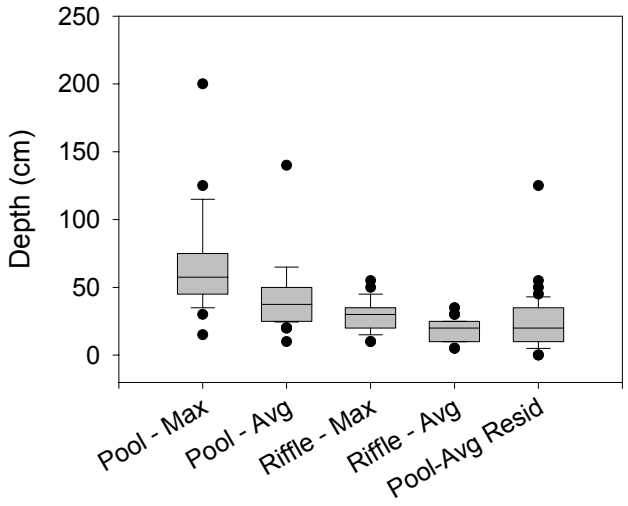
Other Stream Attributes	
Mean Bankfull Channel Width (m):	12
Mean Channel Gradient (%):	2
Median Water Temperature (C):	18



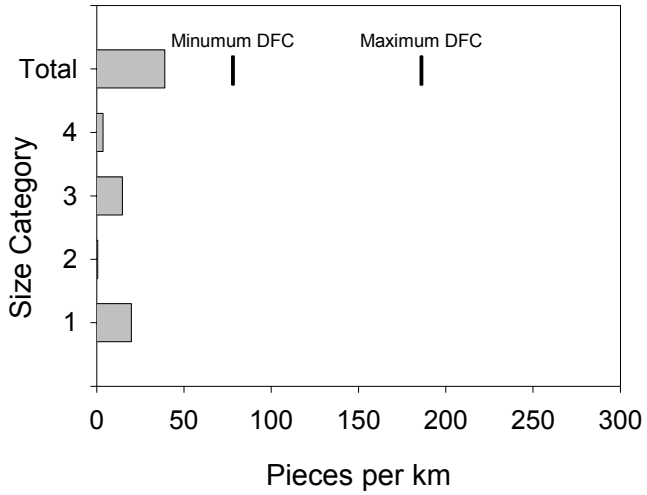
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hone Quarry (lower), summer 2003.



Estimated area of Hone Quarry (lower), in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Hone Quarry (lower), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

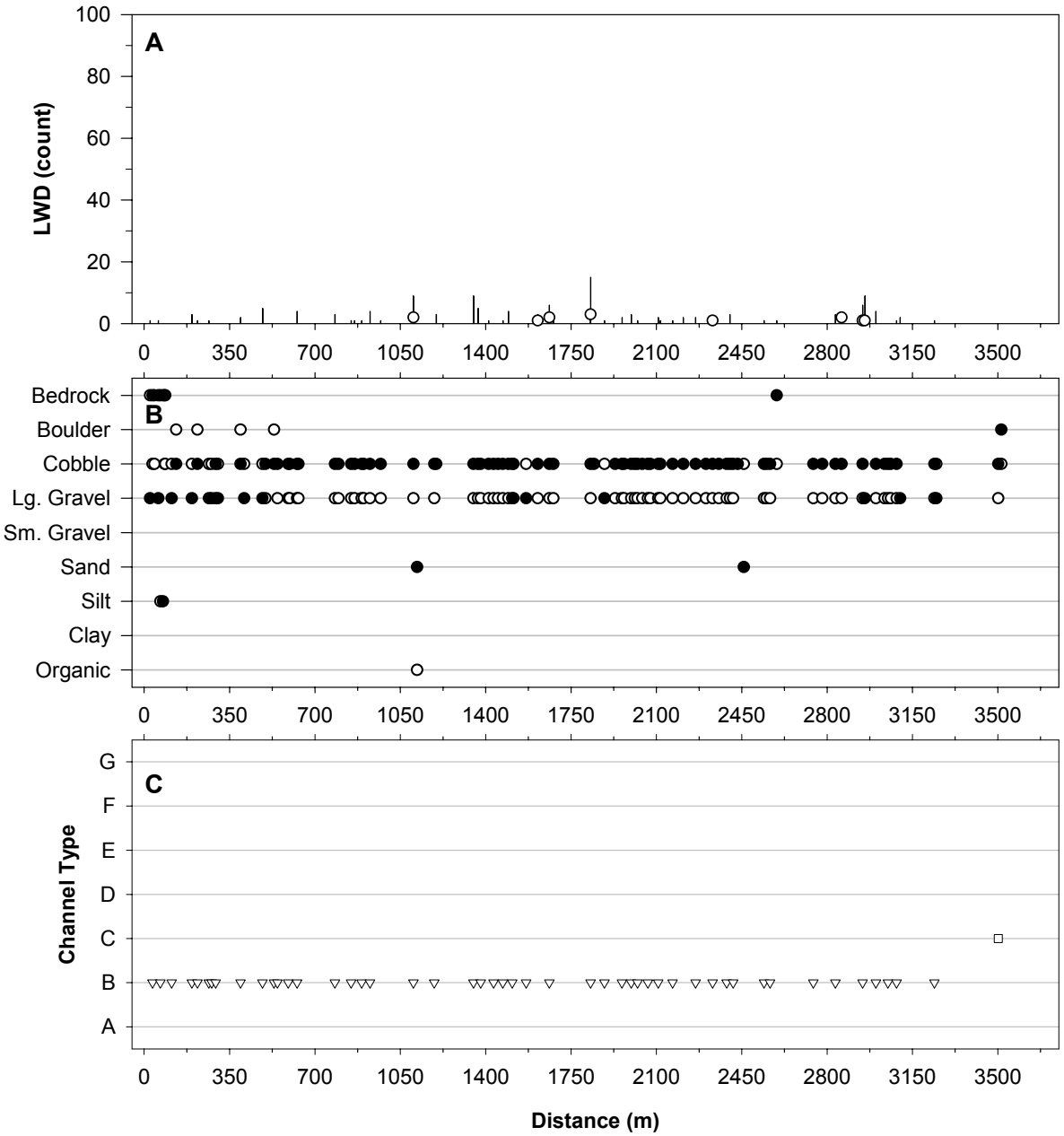


LWD per kilometer in Hone Quarry (lower), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hone Quarry (lower), during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	456.9	0.4	IN ON RIGHT
Side channel	661.5	0.2	IN ON RIGHT
Side channel	1119.9	3.5	IN ON LEFT
Side channel	1127.5	2	IN ON LEFT
Side channel	1378.9	3	OUT ON LEFT
Seep	1514.3		IN ON LEFT
Side channel	2205.2	3	IN ON RIGHT
Tributary	2367.9	1	IN ON LEFT
Side channel	2372.1	1	IN ON LEFT
Ford	2433.4		FOREST ROAD 62 CROSSES STREAM; CONCRETE BRIDGE WITH 3 HOLE CULVERTS
Tributary	2611.2	2.5	IN ON RIGHT
Side channel	2887.4		IN ON RIGHT DRY
Side channel	3007.3		OUT ON RIGHT DRY
Ford	3345.6		FOREST ROAD 62 CROSSES STREAM; GRAVEL ROAD WITH 3 METAL CULVERTS



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hone Quarry (lower), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from USFS boundary off Forest Road 62. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hone Quarry (upper)**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	07/16/03
Downstream Starting Point:	Upper end of Hone Quarry Lake off Forest road 62
Total Distance Surveyed (km):	5.5

	Pools	**Riffles**
Percent of Total Stream Area:	27	73
Total Area (m^2):	1472±251	3916±706
Correction Factor Applied:	0.88	0.95
Number of Paired Samples:	3	3
Total Count:	32	36
Number per km:	6	7
Mean Area (m^2):	46	109
Mean Maximum Depth (cm):	50	22
Mean Average Depth (cm):	30	10
Mean Residual Depth (cm):	18	--
Percent Surveyed as Glides:	9	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	6
Percent with >35% Fines:	22	6

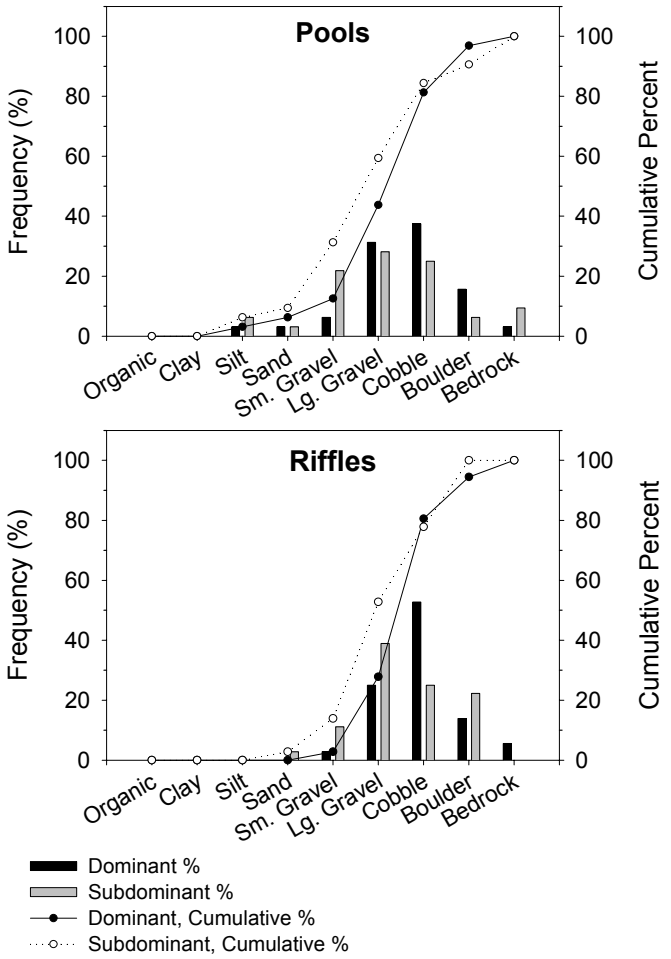
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	2
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	6
> 5 m long, > 55 cm diameter:	3
Total:	10

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	9	1
Maximum	12	1
75th Percentile	10	1
25th Percentile	8	1
Minimum	7	1

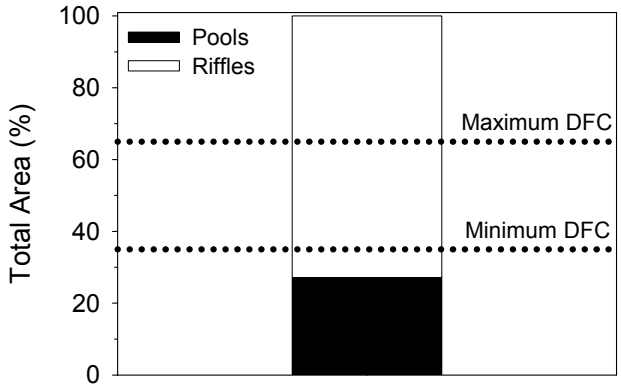
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	35
C:	0
D:	0
E:	0
F:	65
G:	0

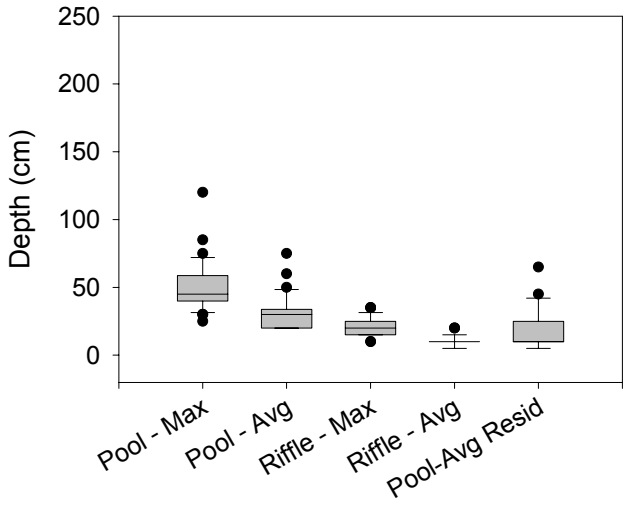
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	3
Median Water Temperature (C):	17



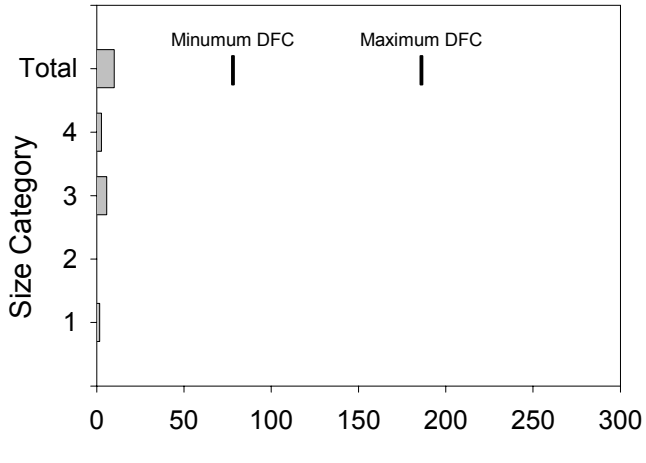
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hone Quarry (upper), summer 2003.



Estimated area of Hone Quarry (upper) in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Hone Quarry (upper), summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

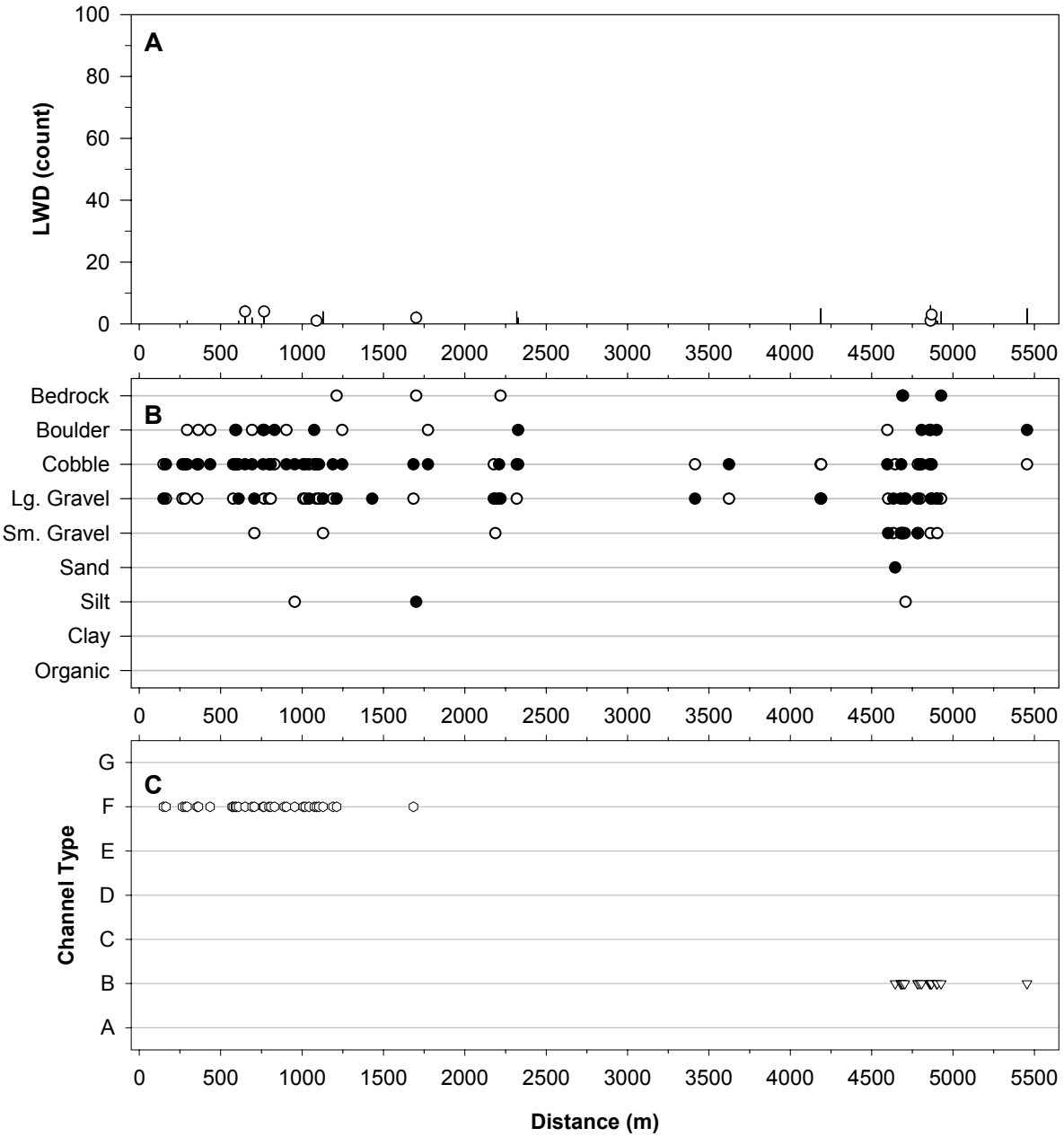


LWD per kilometer in Hone Quarry (upper), summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hone Quarry (upper) during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	211	1	IN ON LEFT
Side channel	254.2	2.5	OUT ON LEFT
Side channel	318.4		IN ON LEFT DRY
Side channel	396.3	2	IN ON RIGHT
Side channel	766.8	1	IN ON LEFT
Side channel	903.5	1.5	OUT ON LEFT
Tributary	959		IN ON LEFT LOOKS PRETTY DRY
Side channel	964.6	1.5	IN ON LEFT
Side channel	1055.1	1	IN ON LEFT
Ford	1112.5		LOOKS LIKE A FORD BUT COULD BE A TRAIL
Tributary	1185.6		IN ON RIGHT DRY
Side channel	1211.8	2.2	IN ON RIGHT
Tributary	1447.7		TRICKLES IN ON RIGHT,TRIB CREATES SIDE CHANNEL
Side channel	1857.4		IN ON LEFT,DRY
Ford	3297.7		ROAD 62 CREATES FORD WITH STREAM
Side channel	3335.2	1	IN ON LEFT
Tributary	3362.6	0.75	IN ON RIGHT
Ford	3538.2		FOREST ROAD 62 CROSSES STREAM
Tributary	3618.6		IN ON LEFT, DRY
Tributary	4155.8		IN ON LEFT
Tributary	4173		IN ON RIGHT
Tributary	4232.7		DRY, IN ON LEFT
Ford	4308.4		
Tributary	4722.5		IN ON RIGHT, DRY
Tributary	4986.4	1.5	IN ON RIGHT, SAME FLOW AS MAIN CHANNEL
Tributary	5161.8	0.3	IN ON LEFT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hone Quarry (upper), summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from the upper end of Hone Quarry Lake off Forest Road 62. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Mines Run**
District:	Dry River
USGS Quadrangle:	Reddish Knob
Survey Date:	07/16/03
Downstream Starting Point:	At Briery Branch Lake
Total Distance Surveyed (km):	3.6

	Pools	**Riffles**
Percent of Total Stream Area:	16	84
Total Area (m^2):	1268±156	6896±400
Correction Factor Applied:	1.08	0.97
Number of Paired Samples:	6	6
Total Count:	55	55
Number per km:	15	15
Mean Area (m^2):	23	125
Mean Maximum Depth (cm):	32	21
Mean Average Depth (cm):	19	9
Mean Residual Depth (cm):	8	--
Percent Surveyed as Glides:	71	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	9	2

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	22
< 5 m long, > 55 cm diameter:	1
> 5 m long, 10 cm – 55 cm diameter:	40
> 5 m long, > 55 cm diameter:	2
Total:	65

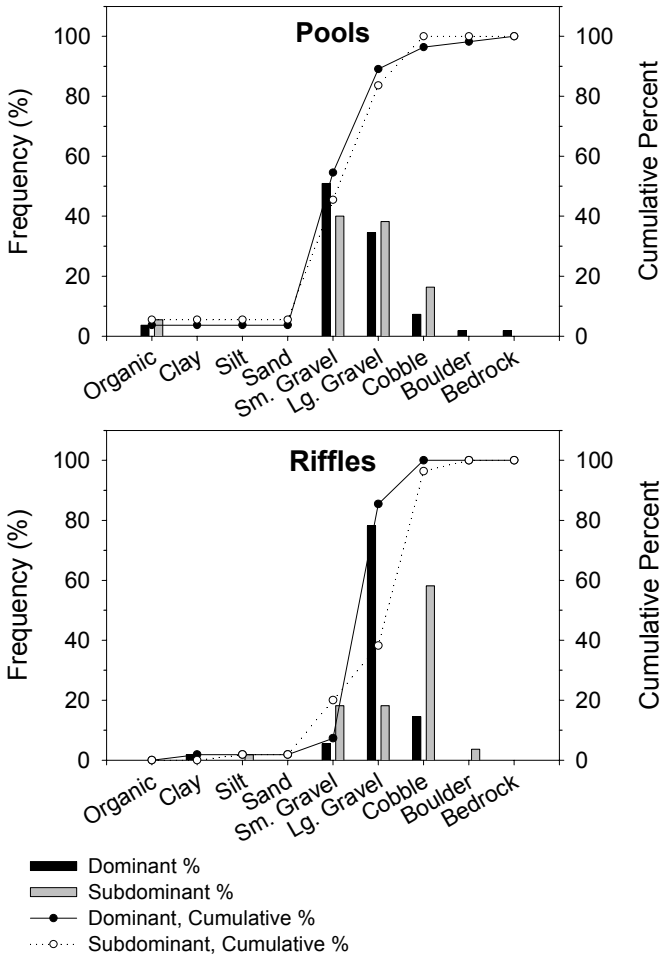
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	17	5
Maximum	53	45
75th Percentile	16	3
25th Percentile	7	1
Minimum	6	0

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

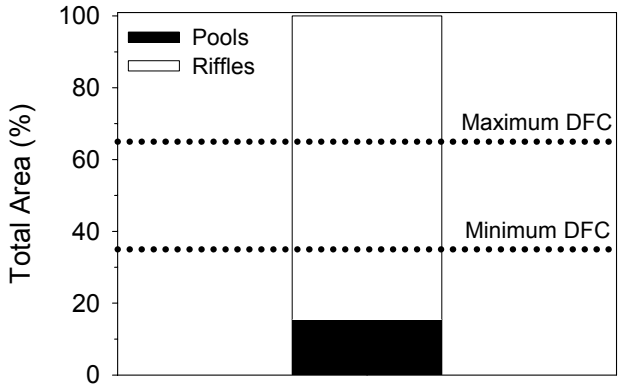
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	58
C:	0
D:	0
E:	0
F:	42
G:	0

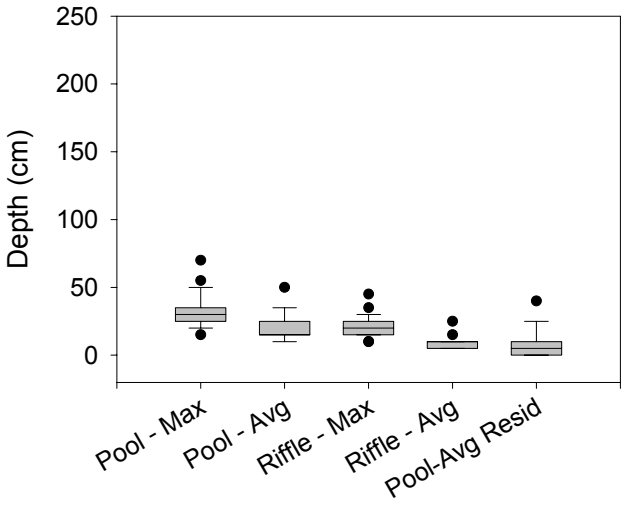
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	3
Median Water Temperature (C):	18.5



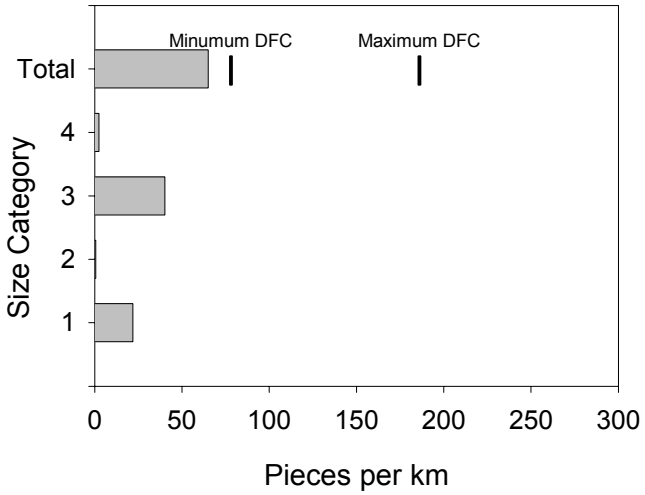
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Mines Run, summer 2003.



Estimated area of Mines Run in pools and riffles as calculated using BVET techniques, summer 2003. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Mines Run, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

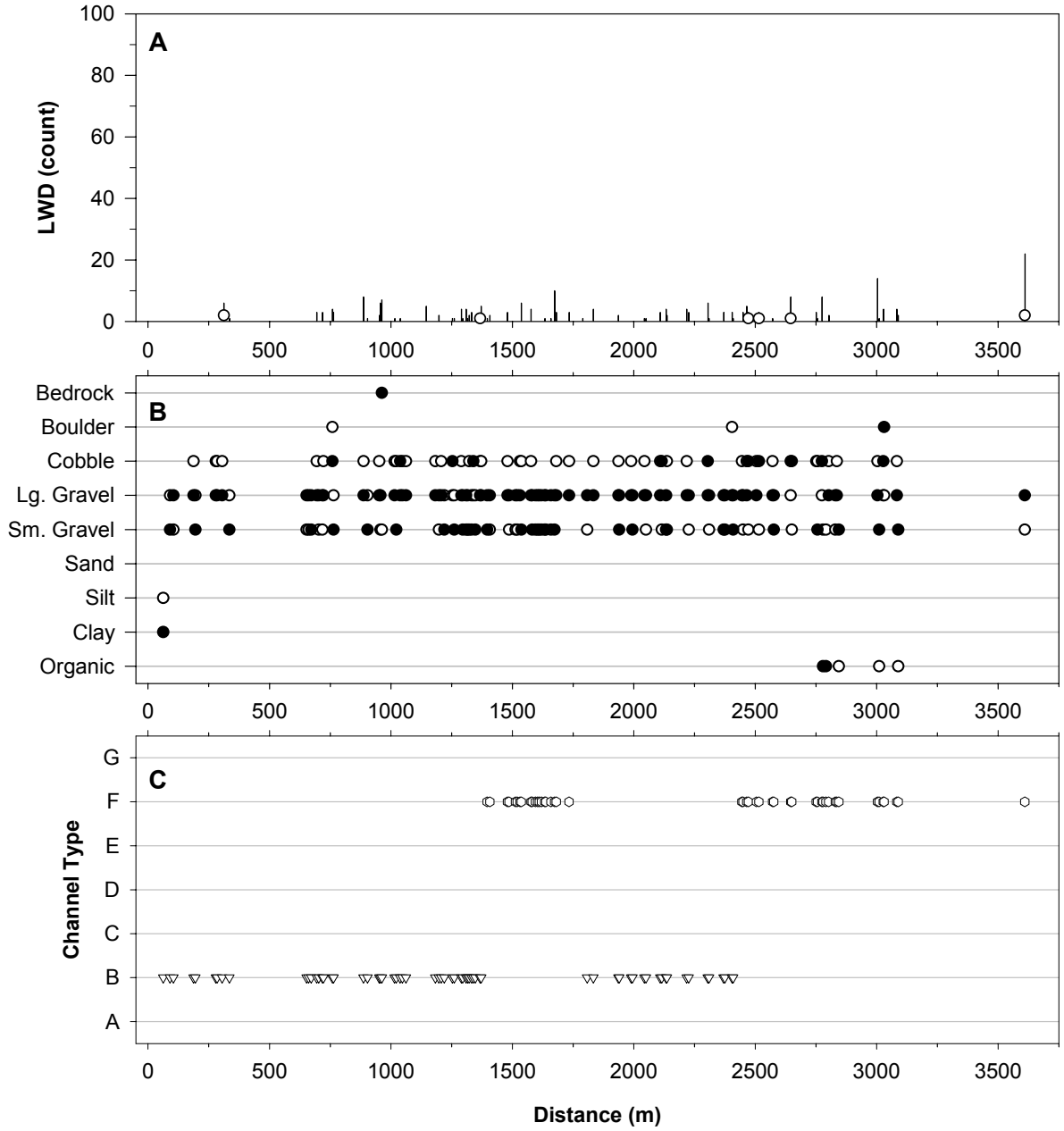


LWD per kilometer in Mines Run, summer 2003. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

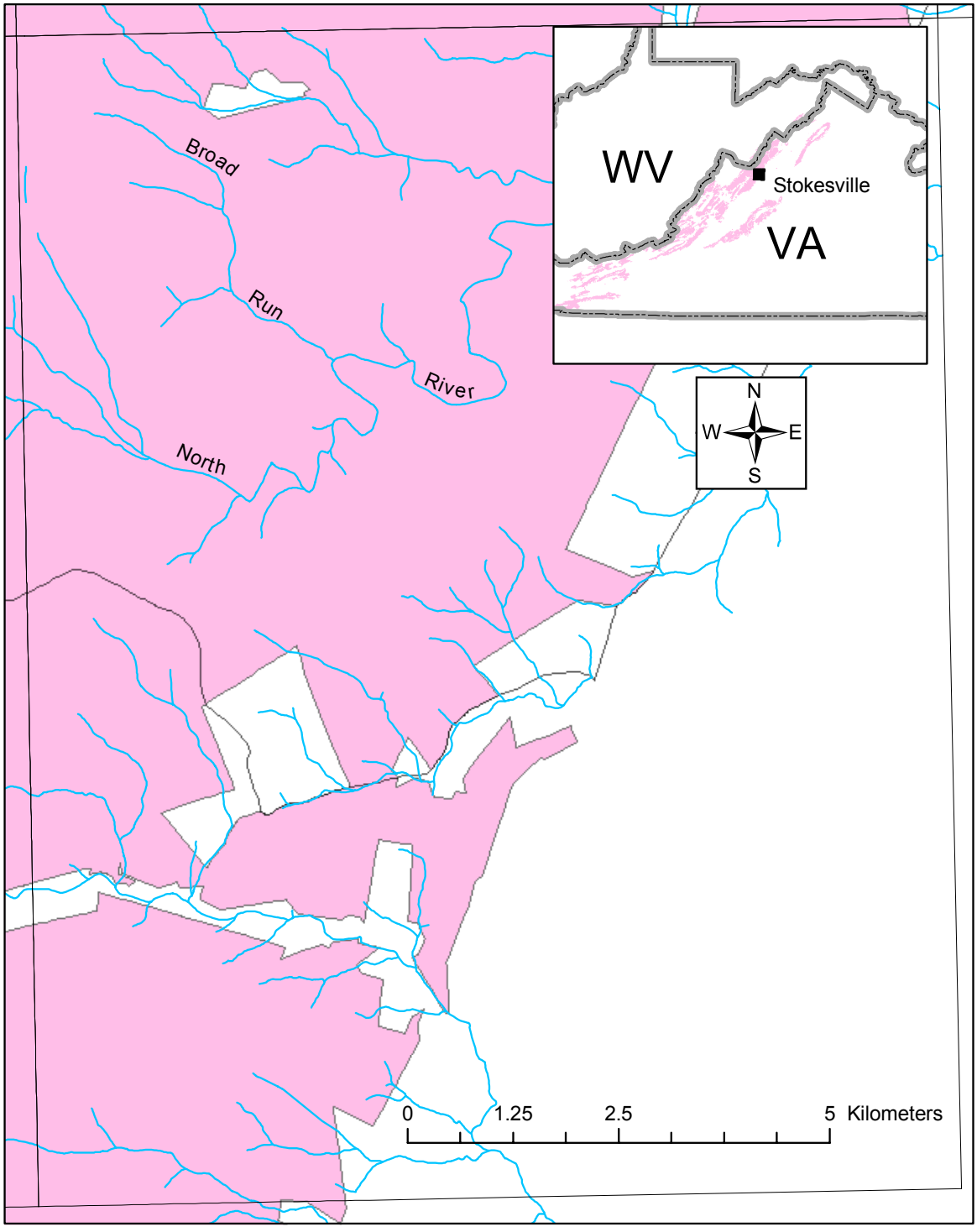
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Mines Run during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side channel	104.3	1	IN ON LEFT
Side channel	165		OUT ON LEFT
Seep	174.2		ON LEFT, STEADY FLOW
Bridge	326.7		RT. 924 BRIDGE
Tributary	335		ALL WATER IN PREVIOUS SECTION COMES FROM BRIERY BRANCH ON THE LEFT
Tributary	919.3		DRY TRIB ON RIGHT
Tributary	967.3	2	ABOUT SAME SIZE AS CREEK, APPEARS TO BE FIRST TRIB SHOWN ON QUAD MAP
Ford	990.8		TRAIL CROSSING
Ford	1339.4		TRAIL CROSSING
Tributary	1364.8		DRY TRIB ON RIGHT
Seep	1520		ON RIGHT SIDE, STEADY FLOW
Side channel	1680.4	1	IN ON RIGHT
Side channel	1754.4		OUT ON RIGHT, UNDERGROUND
Ford	1833.1		TRAIL CROSSING
Tributary	2038.5	0.8	ON RIGHT



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Mines Run, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Briery Branch Lake. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).



Streams inventoried on the Stokesville Quadrangle using BVET habitat surveys during summer 2002.

Stream:	**Broad Run**
District:	Dry River Ranger
USGS Quadrangle:	Stokesville
Survey Date:	07/23/02
Downstream Starting Point:	Confluence of North River; located at North River Campground
Total Distance Surveyed (km):	4.6

	Pools	**Riffles**
Percent of Total Stream Area:	36	64
Total Area (m^2):	3094±505	5559±898
Correction Factor Applied:	1.10	1.02
Number of Paired Samples:	15	10
Total Count:	146	117
Number per km:	32	26
Mean Area (m^2):	21	48
Mean Maximum Depth (cm):	26	12
Mean Average Depth (cm):	16	6
Mean Residual Depth (cm):	12	--
Percent Surveyed as Glides:	14	--
Percent Surveyed as Runs:	--	9
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	86
< 5 m long, > 55 cm diameter:	2
> 5 m long, 10 cm – 55 cm diameter:	42
> 5 m long, > 55 cm diameter:	2
Total:	131

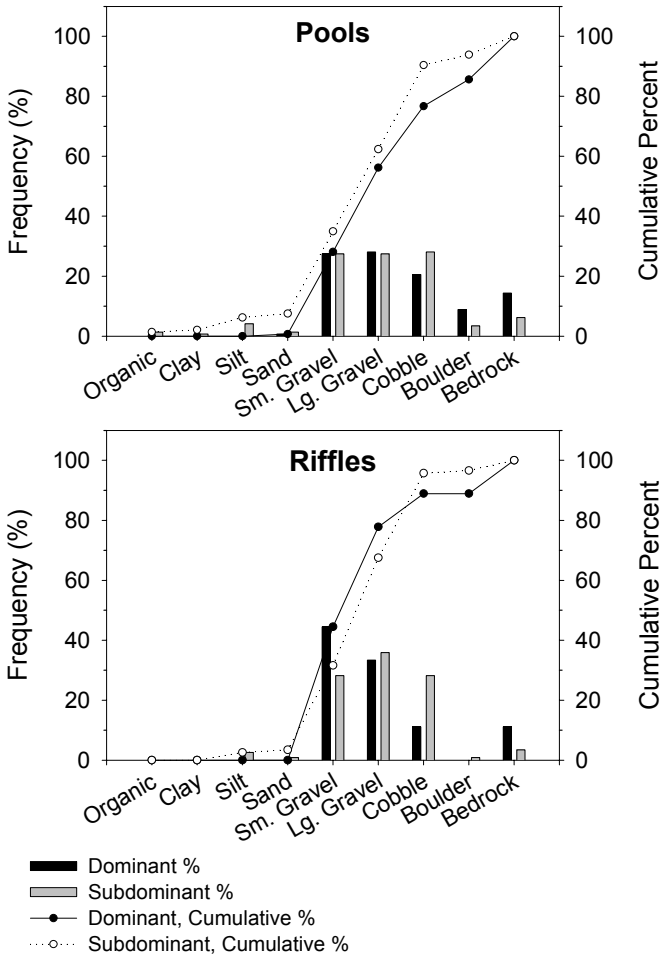
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	14	4
Maximum	23	14
75th Percentile	19	6
25th Percentile	8	1
Minimum	7	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

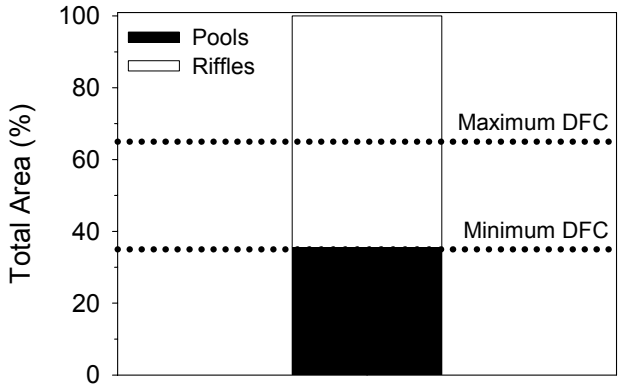
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	18
C:	69
D:	0
E:	0
F:	0
G:	13

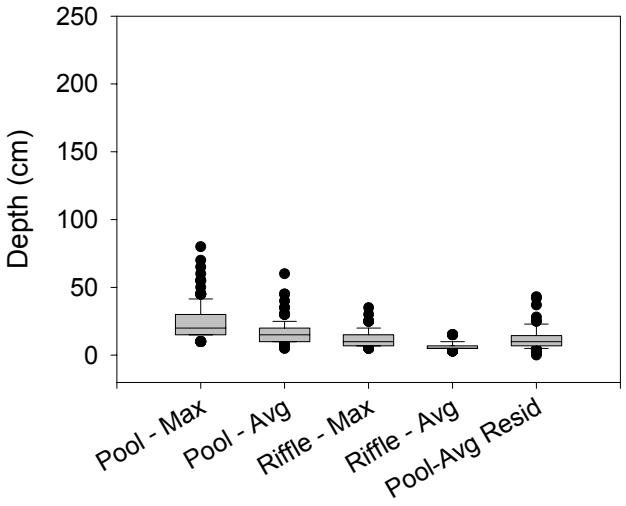
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	4
Median Water Temperature (C):	22



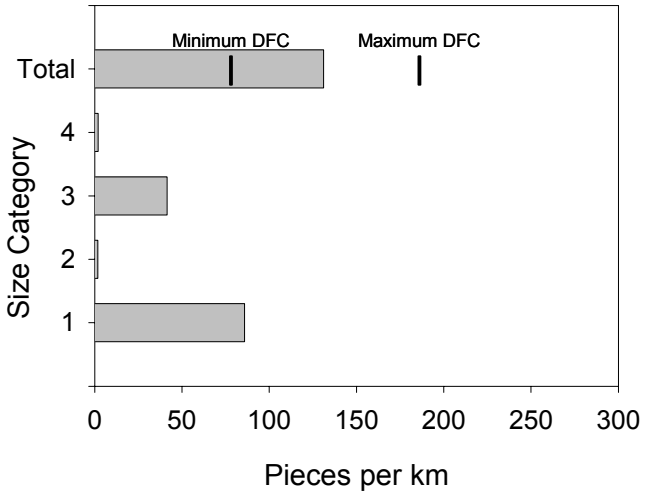
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Broad Run, summer 2002.



Estimated area of Broad Run in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in Broad Run, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

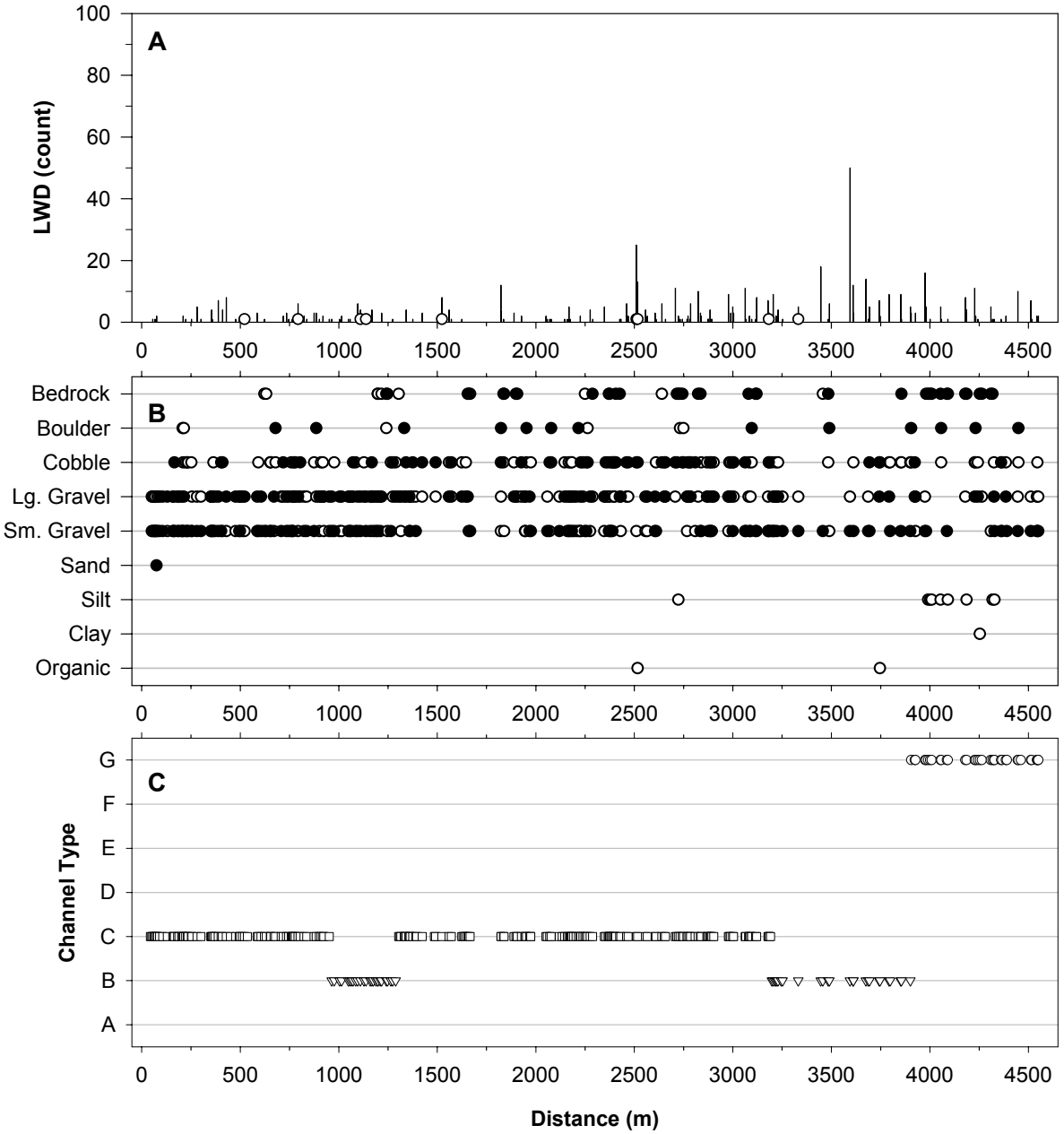


LWD per kilometer in Broad Run, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Broad Run during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Underground	43.3		from 0.0 m to 43.3 m
Side Channel In	402.9	1	on left
Side Channel Out	428.9	1	on left
Underground	449.9		from 428.9 m to 449.9 m
Underground	536.4		from 521.4 m to 536.4 m
Underground	1335.2		from 1332.0 m to 1335.2 m
Underground	1355.5		from 1341.8 m to 1355.5 m
Underground	1395.2		from 1395.2 m to 1390.6 m
Side Channel In	1442	2.5	on left
Underground	1485.1		from 1422.8 m to 1485.1 m
Underground	1523.4		from 1491.5 m to 1523.4 m
Culvert	1631		USFS Road 95b
Tributary	1631.1	1	on left
Underground	1638		from 1624.1 m to 1638.0 m
Seep	1960.2	2.5	on right
Underground	1973.4		from 1967.9 m to 1973.4 m
Underground	2051.4		from 1974.3 m to 2051.4 m
Underground	2133.8		from 2119.1 m to 2133.4 m
Tributary	2187.1		on left, dry
Tributary	2732	2	on left
Side Channel In	2797.7	0.5	on left
Side Channel Out	2808.8		on left, dry
Trail Crossing	2933.9		
Underground	3191.4		from 3185.0 m to 3191.4 m
Underground	3244.9		from 3229.6 m to 3244.9 m
Side Channel In	3434.9	1	on right
Underground	3446.1		from 3434.9 m to 3446.1 m
Seep	3551.3		
Underground	3610		from 3594.4 m to 3610.0 m
Seep	3629.8	3	
Side Channel	3646.3		
Underground	3675.4		from 3611.7 m to 3675.4 m
Seep	4427.9	1	on left
Underground	4461.8		from 4449.1 m to 4461.8 m
Underground	4516.2		from 4512.5 m to 4516.2 m
Underground	4548.9		from 4545.1 m to 4548.9 m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Broad Run, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from confluence of North River. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**North River**
District:	Dry River Ranger
USGS Quadrangle:	Stokesville/West Augusta
Survey Date:	06/24/02
Downstream Starting Point:	Where North River enters into Elkhorn Lake
Total Distance Surveyed (km):	6.9

	Pools	**Riffles**
Percent of Total Stream Area:	43	57
Total Area (m^2):	12089±1855	16002±3554
Correction Factor Applied:	0.85	0.84
Number of Paired Samples:	11	10
Total Count:	116	96
Number per km:	17	14
Mean Area (m^2):	104	167
Mean Maximum Depth (cm):	53	20
Mean Average Depth (cm):	36	13
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	9	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	--*	--*

*data not collected in 2002

Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	44
< 5 m long, > 55 cm diameter:	0
> 5 m long, 10 cm – 55 cm diameter:	14
> 5 m long, > 55 cm diameter:	0
Total:	58

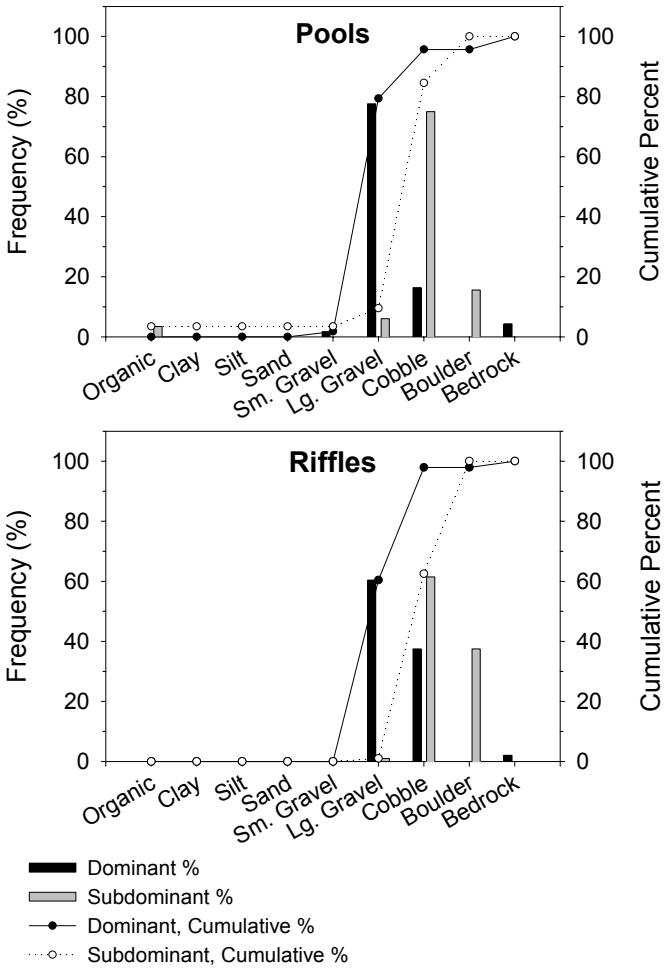
Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean	66	26
Maximum	108	67
75th Percentile	92	37
25th Percentile	36	6
Minimum	20	1

*Left riparian, right riparian, and bankfull channel widths were added together for calculations

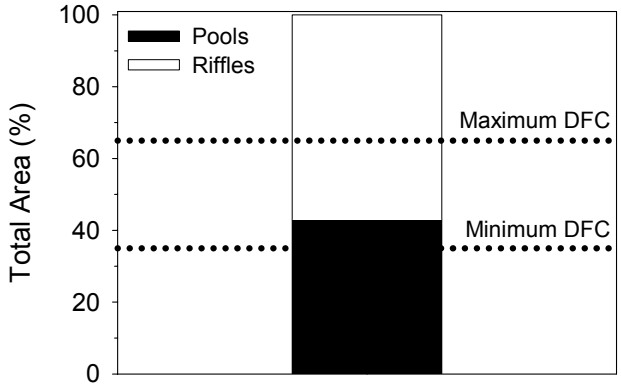
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen's Channel Type	**Frequency (%)**
A:	0
B:	8
C:	92
D:	0
E:	0
F:	0
G:	0

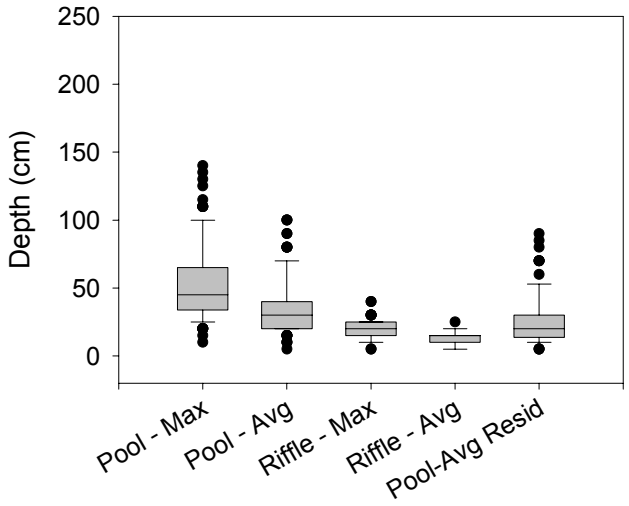
Other Stream Attributes	
Mean Bankfull Channel Width (m):	16
Mean Channel Gradient (%):	2
Median Water Temperature (C):	17



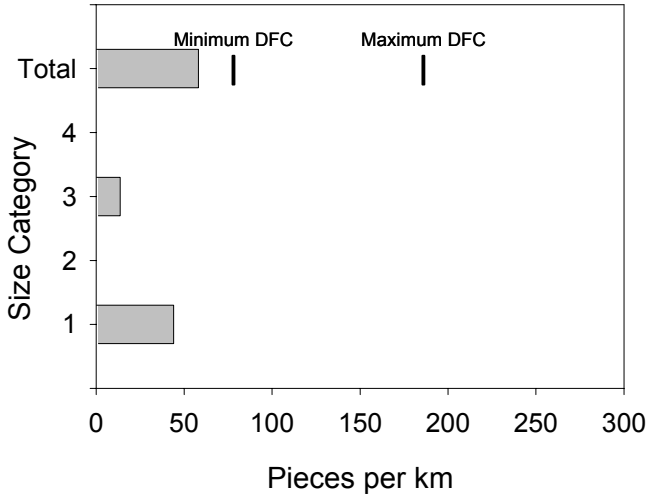
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in North River, summer 2002.



Estimated area of North River in pools and riffles as calculated using BVET techniques, summer 2002. The GWJNF DFC is between 35 and 65 percent of total stream area in pools.



Maximum and average depths and residual pool depths for pools and riffles in North River, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

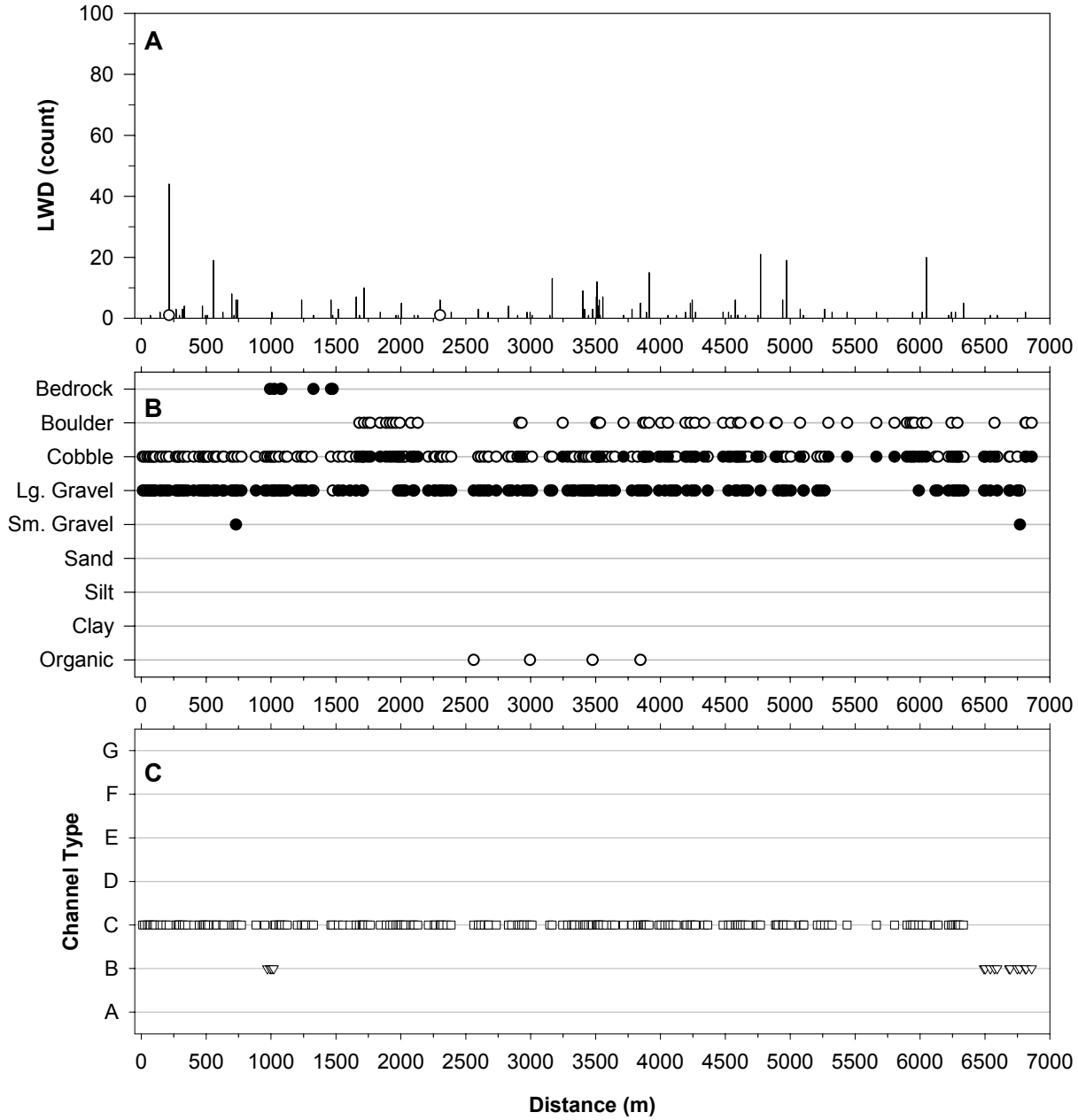


LWD per kilometer in North River, summer 2002. Y-axis labels are LWD size classes described below. The GWJNF DFC for total LWD is between 78 and 186 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on North River during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Tributary	100	3	on left, White Oak Run
Tributary	160.3	1.5	on right
Underground	172.9		from 162.5 m to 172.9 m
Underground	262.9		from 213.8 m to 262.9 m
Underground	276.1		from 268.0 m to 276.1 m
Underground	302.6		from 293.0 m to 302.6 m
Underground	336.3		from 330.8 m to 336.3 m
Tributary	857.8	2.5	on left
Bridge	898		USFS Road 95
Tributary	1329.9	1	on left
Tributary	1679.9	2	on right
Bridge	1858		USFS Road 95
Underground	2185.3		from 2129.9 m to 2185.3 m
Underground	2379.7		from 2354.7 m to 2379.7 m
Tributary	2433.2		on left
Underground	2552.1		from 2387.9 m to 2552.1 m
Underground	2567.9		from 2561.9 m to 2567.9 m
Tributary	2898.3	3	on left
Underground	2989.3		from 2970.8 m to 2989.3 m
Underground	3003.8		from 2995.4 m to 3003.8 m
Underground	3054.9		from 3010.5 m to 3054.9 m
Underground	3192.1		from 3165.0 m to 3192.1 m
Side Channel In	3378		on right
Underground	3960.6		from 3913.0 m to 3960.6 m
Side Channel Out	3960.6		on right
Side Channel In	3988.4	4	on right
Tributary	4650.4	3	on left
Underground	4758.3		from 4749.7 m to 4758.3 m
Underground	4871.4		from 4770.5 m to 4871.4 m
Underground	4929.8		from 4906.9 m to 4929.8 m
Underground	4951.8		from 4947.7 m to 4951.8 m
Underground	4981.3		from 4969.6 m to 4981.3 m
Underground	5180.7		from 5104.0 m to 5180.7 m
Tributary	5232.9		on left
Side Channel In	5353.9		on right
Side Channel Out	5448.6		on right
Underground	5644		from 5437.9 m to 5644.0 m
Underground	5775.9		from 5663.4 m to 5775.9 m
Underground	5877.7		from 5802.9 m to 5877.7
Bridge	5934.8		USFS Road 95
Underground	6080.9		from 6047.5 m to 6080.9 m
Tributary	6187.9		on left, dry
Side Channel In	6241.6		on right
Underground	6302.8		from 6294.6 m to 6302.8 m
Underground	6314.9		from 6306.4 m to 6314.9 m
Side Channel Out	6321.6		on right
Side Channel In	6393		on left
Underground	6470.2		from 6393.0 m to 6470.2
Side Channel Out	6479.6		on left



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in North River, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from point at which North River flows into Elkhorn Lake. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Appendix A:

Size classes used to categorize large woody debris during BVET habitat surveys on the Dry River Ranger District, summer 2002 and summer 2003. Woody debris < 1.0 m in length or < 10 cm in diameter were omitted.

Size Class	Length (m)	Diameter (cm)
1	< 5	10-55
2	< 5	> 55
3	> 5	10-55
4	> 5	> 55

Size classes used to categorize substrate particles during BVET habitat surveys on the Dry River Ranger District, summer 2002. Size was visually estimated on the intermediate axis (b-axis).

Size Class	Name	Size (mm)	Description
1	Organic	--	Dead organic matter, leaves, detritus, etc.
2	Clay	<0.00024	Sticky
3	Silt	0.00024-0.0039	Slippery
4	Sand	0.0039-2	Gritty
5	Small Gravel	2-10	Sand to thumbnail
6	Large Gravel	11-100	Thumbnail to fist
7	Cobble	101-300	Fist to head
8	Boulder	>300	Larger than head
9	Bedrock	--	Solid parent material

Size classes used to categorize substrate particles during BVET habitat surveys on the Dry River Ranger District, summer 2003. Size was visually estimated on the intermediate axis (b-axis).

Size Class	Name	Size (mm)	Description
1	Organic	--	Dead organic matter, leaves, detritus, etc.
2	Clay	< 0.00024	Sticky
3	Silt	0.00024-0.0039	Slippery
4	Sand	0.0039-2	Gritty
5	Small Gravel	3-16	Sand to thumbnail
6	Large Gravel	17-64	Thumbnail to fist
7	Cobble	65-256	Fist to head
8	Boulder	>256	Larger than head
9	Bedrock	--	Solid parent material

Bankfull channel characteristics used to determine Rosgen channel types in the field during BVET habitat surveys on the Dry River Ranger District, summer 2002 and summer 2003.

Channel Type	A	B	C	D	E	F	G
Entrenchment	< 1.4	1.4 – 2.2	> 2.2	n/a	> 2.2	< 1.4	< 1.4
W/D Ratio	< 12	> 12	> 12	> 40	< 12	> 12	< 12
Slope (%)	4 – 9.9	2 – 3.9	< 2	< 4	< 2	< 2	2 – 3.9